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DAMAGE PROBABILITIES FOR SMALL-CEP, LOW-YIELD,
AIRBURST/GROUNDBURST ATTACKS AGAINST SELECTED PVN
AND QVN POINT TARGETS

D. C. Kephart, et al

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**Damage Probabilities for Small-CEP,
Low-Yield, Airburst/Groundburst
Attacks Against Selected PVN
and QVN Point Targets**

D. C. Kephart and M. J. Parise

A Report prepared for
UNITED STATES AIR FORCE PROJECT RAND

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Presents computed tables showing the single-shot probability of damage to a target as a function of yield and CEP, for a weapon bursting either at ground level or at an altitude that approximately maximizes the probability of blast damage. The tables cover 28 P-type and 12 Q-type targets of current military interest. Additional spot calculations involving yields, CEPs, and vulnerability numbers not listed in this report can be made using Rand's circular slide rule calculator R-1380-PR. See also R-1168, R-1168/1. (PB)

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Damage Probabilities for Small-CEP,
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UNITED STATES AIR FORCE PROJECT RAND

Rand
SANTA MONICA, CA. 90406

PREFACE

This report is a companion volume to Rand reports R-1168-PR^{*} and R-1168/1-PR,^{*} which together present tables of single-shot "optimal" airburst damage probabilities as a function of delivery CEP and yield for 150 selected P-type (PVN) and Q-type (QVN) military targets. It was prepared under Project RAND in response to requests by Air Force officers and agencies for additional computed tables estimating the outcomes of attacks using small CEPs and small nuclear weapon yields, both airburst and groundburst, against certain overpressure-sensitive PVN point targets and dynamic-pressure-sensitive QVN point targets.

The damage probability tables given here cover 28 PVNs and 12 QVNs of current military interest. Additional spot calculations involving yields, CEPs, and vulnerability numbers not listed here can be made using Rand's circular slide rule calculator R-1380-PR,^{*} which is available to users of this report.

This work was conducted under the Rand project entitled "Future Strategic Aerospace Force Requirements."

^{*}R-1168-PR, *Some Aids for Estimating Damage Probabilities in Attacks Against Targets with P and Q Vulnerability Numbers*, D. C. Kephart, March 1973; R-1168/1-PR, *Some Aids for Estimating Damage Probabilities in Attacks Against Targets with P and Q Vulnerability Numbers: Supplementary Tables for Point Targets*, D. C. Kephart, November 1973; R-1380-PR, *Damage Probability Computer for Point Targets with P and Q Vulnerability Numbers*, D. C. Kephart, February 1974.

DAMAGE PROBABILITIES FOR SMALL-CEP, LOW-YIELD, AIRBURST/GROUNDBURST
ATTACKS AGAINST SELECTED PVN AND QVN POINT TARGETS

This report presents computed tables showing single-shot probability of damage (PD) to a point target as a function of yield and CEP, for a weapon bursting either at ground level or at an altitude that approximately maximizes the probability of blast damage, for a selection of PVN and QVN vulnerability numbers of current military interest. Damage probabilities are tabulated for yields in steps from 1 ton to 70 KT, with CEPs in steps from 0 to 600 ft. Definitions, assumptions, and mathematical bases for the damage tables are as detailed in Rand report R-1168-PR and in *Physical Vulnerability Handbook--Nuclear Weapons* (U), Defense Intelligence Agency, AF-550-1-2-69-INT, 1 June 1969 (Confidential).

The quantities listed in the computer printout PD tables are identified below:

VN = vulnerability number; arbitrary classification of a target's susceptibility to blast damage (as defined in R-1168-PR and in the DIA's *Physical Vulnerability Handbook--Nuclear Weapons*).

KT = warhead yield, kilotons.

Adj VN = adjusted VN, to account for yield-dependent damage response.

psi = peak overpressure (for PVNs), or peak dynamic pressure (for QVNs) at the weapon radius, lb/sq in.

HOB = weapon height of burst, ft (airburst values for HOB > 0 are associated with "maximum" probability of damage).

WR = weapon radius, ft.

CEP = circular probable error weapon delivery accuracy, ft.

PD = single-shot probability of damage.

For target VNs and yield-CEP combinations not listed here or in R-1168-PR, an interactive computing program is available (as described

in R-1168-PR) for calculating additional PD tables via remote interactive coupling to Rand's JOSS[®] computer. The computing program also calculates discrete sets of airburst and groundburst damage probabilities for both point targets and circular area targets with an offset aim point option for any yield-CEP combination, for both PVNs and QVNs.

For those wishing to translate to other computing languages a listing of the JOSS program is included in this report as Appendix A, and a summary of the JOSS language is presented as Appendix B. Attention is invited to parts 37 and 38 in the program where the equations fitting weapon radius to the adjusted vulnerability number are revised slightly to smooth out minor discontinuities associated with those listed in R-1168-PR.

The 1974 revisions to DIA's *Physical Vulnerability Handbook--Nuclear Weapons* do not affect the results for PVNs (sigma-20) and QVNs (sigma-30) given here and in the previous Rand publications. Concerning the accuracy of results--while the calculated damage probabilities are printed in three significant figures as an aid to curve-plotting and to show incremental trends, it should be recognized that actual outcomes might be greatly perturbed, perhaps as much as 25 percent, by uncertainties in bomb yield, delivery accuracy, height-of-burst, target location, target response, and target vulnerability number. These uncertainties, which are not accounted for here, may not ever be predictable, with high confidence, in advance of a conflict involving nuclear weapons.

The vulnerability numbers for which PD tables are presented, either here, or in R-1168-PR, or in R-1168/1-PR, are indexed on the following page. In R-1168-PR and R-1168/1-PR the PD tables are for airbursting on point targets with yields varying from 20 KT to 12 MT or 25 MT, with CEPs varying from 200 ft or 400 ft to 10,000 ft. In this report the PD tables are for both airbursting and groundbursting on point targets with yields varying from 1 ton to 70 KT and with CEPs varying from 0 to 600 ft.

PVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10	●								
11	●								
12	●	●							
13	●		●						
14									
15									
16									
17									
18									
19									
20									
21	●								
22	●								
23									
24									
25									
26									
27									
28									
29	●								
30	●								
31		●							
32			●						
33				●					
34									●
35		●							
36									
37							●	●	
38		●			●		●	●	
39	●						●	●	
40								●	●
41							●		
42							●		
43									
44									
45									
46									
47									
48									●
49									
50									
51									
52									
53									
54									
55									
56									
57									

QVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11							●		
12							●		
13							●		
14							●		
15									
16							●		
17								●	
18							●		●
19							●		●
20							●	●	●
21									●
22									
23									
24									
25									

● DAMAGE PROBABILITY
TABLES IN THIS
REPORT

PVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6	△								
7	△								
8	△								
9	△								
10	△								
11	△	△							
12	△	△							
13	△	△							
14	△	△							
15	△	△							
16	△	△							
17	△	△							
18	△	△							
19	△	△							
20	△	△							
21	△	△							
22	△	△							
23	△	△							
24	△	△							
25	△	△							
26	△	△							
27	△	△							
28	△	△							
29	△	△							
30	△	△							
31	△	△							
32	△	△							
33	△	△							
34	△	△							
35	△	△							
36	△	△							
37	△	△							
38	△	△							
39	△	△							
40	△	△							
41	△	△							
42	△	△							
43	△	△							
44	△	△							
45	△	△							
46	△	△							
47	△	△							
48	△	△							
49	△	△							
50	△	△							
51	△	△							
52	△	△							
53	△	△							
54	△	△							
55	△	△							
56	△	△							
57	△	△							

QVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

● R-1168-PR
△ R-1168/1-PR

INDICES OF DAMAGE PROBABILITY TABLES

IIP0

Ground-burst

Air-burst

11P0

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Ref	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
WR	114	144	195	215	245	310	421	471	530	660	907	1014	1142	1406	1924	2155	2401	3101	4209	4708
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD

30	.994	.999																		
40	.980	.995	.999																	
50	.960	.980	.997	.998	.999															
75	.759	.980	.987	.982	.991	.998														
100	.570	.724	.887	.927	.957	.987	.998	.999												
125	.425	.575	.775	.837	.891	.938	.982	.994	.998											
150	.323	.455	.659	.732	.803	.878	.938	.988	.994	.999										
200	.109	.295	.466	.540	.620	.710	.815	.907	.970	.992	.999	.999								
250	.133	.262	.336	.398	.471	.526	.617	.672	.718	.771	.835	.897	.938							
300	.095	.146	.250	.300	.362	.503	.708	.777	.842	.933	.985	.992	.998	.999						
350	.071	.110	.191	.232	.284	.406	.605	.680	.756	.878	.946	.981	.990	.998						
400	.055	.085	.151	.184	.227	.332	.515	.590	.670	.813	.937	.963	.980	.995	.999					
450	.044	.068	.121	.149	.185	.274	.439	.511	.591	.744	.899	.936	.963	.989	.999					
500	.035	.056	.100	.123	.153	.230	.377	.443	.520	.676	.855	.902	.940	.980	.997	.998	.999			
600	.025	.039	.070	.087	.109	.167	.283	.338	.405	.553	.755	.819	.877	.931	.990	.995	.998	.999		

IIP0

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Ref	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
WR	79	100	135	151	170	214	291	325	367	467	627	701	790	995	1350	1511	1702	2144	2910	3255
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD

30	.998	.999																		
40	.981	.998																		
50	.926	.975	.996	.998	.999															
75	.801	.908	.977	.988	.994	.999														
100	.682	.806	.934	.960	.978	.994	.999													
125	.519	.694	.864	.912	.947	.981	.997	.999												
150	.361	.501	.706	.776	.841	.932	.985	.992	.996	.997										
200	.253	.355	.556	.612	.711	.845	.953	.972	.985	.996	.999									
250	.184	.271	.437	.509	.599	.742	.898	.955	.962	.989	.998	.999								
300	.139	.210	.344	.412	.486	.641	.879	.942	.975	.974	.996	.998	.999							
350	.109	.166	.281	.337	.403	.551	.753	.818	.875	.951	.980	.995	.998	.999						
400	.087	.134	.231	.279	.337	.473	.677	.749	.818	.918	.981	.990	.995	.999						
450	.071	.110	.192	.233	.285	.408	.606	.682	.759	.879	.967	.981	.991	.998						
500	.050	.078	.138	.170	.209	.308	.484	.559	.639	.787	.924	.953	.974	.993	.998	.999				
600	.050	.078	.138	.170	.209	.308	.484	.559	.639	.787	.924	.953	.974	.993	.998	.999				

12P1

Ground-burst

12P1	KL	.001	.002	.005	.007	.010	.020	.05	.07	.10	.10	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj	VW	28.1	22.1	18.0	18.3	17.0	15.6	15.2	14.8	14.1	13.4	13.2	13.0	12.7	12.3	12.3	12.2	12.1	12.0	11.8	11.8
	psi	91	83	61	36	31	25	18	17	15	13	12	12	11	11	10	10	10	10	10	10
	HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WR	37	34	48	106	127	178	273	317	370	437	493	620	941	1223	1713	1934	2158	2810	3871	4350
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
Q																					
5																					
10	.995																				
15	.937	.995																			
20	.864	.973	.999																		
30	.822	.853	.984	.994	.998																
40	.832	.685	.935	.970	.988	.998															
50	.308	.535	.867	.917	.943	.984	.998														
75	.153	.297	.597	.713	.813	.849	.935	.998	.998												
100	.090	.182	.410	.520	.641	.846	.974	.989	.995	.999											
125	.059	.121	.291	.381	.491	.718	.927	.963	.983	.997											
150	.041	.086	.214	.286	.379	.598	.856	.916	.938	.991	.999										
200	.023	.049	.128	.174	.239	.409	.689	.783	.864	.959											
250	.015	.032	.084	.116	.161	.290	.539	.641	.743	.894	.980	.991	.994	.999							
300	.010	.022	.059	.082	.115	.213	.422	.518	.623	.808	.951	.974	.986	.998							
350	.008	.016	.044	.061	.086	.162	.335	.420	.519	.715	.907	.946	.972	.994	.999						
400	.006	.013	.034	.047	.067	.127	.270	.344	.432	.626	.850	.906	.947	.986	.998						
450	.005	.010	.027	.038	.053	.102	.221	.285	.364	.546	.788	.857	.913	.974	.996	.998					
500	.004	.008	.022	.031	.043	.084	.184	.239	.309	.477	.724	.803	.872	.956	.993	.997	.998				
600	.003	.006	.015	.021	.030	.059	.132	.174	.228	.367	.602	.691	.777	.904	.980	.990	.995	.999			

Air-burst

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	28.1	22.1	19.4	19.0	18.3	17.0	15.6	15.2	14.8	14.1	13.4	13.2	13.0	12.7	12.3	12.2	12.1	12.0	11.9	11.8
pdj	91	63	41	36	31	25	19	18	17	15	13	12	12	11	11	10	10	10	10	10
HOB	17	26	49	62	78	117	186	218	257	348	501	573	658	854	1193	1346	1529	1931	2686	3014
WR	39	57	95	116	144	212	342	403	477	654	966	1109	1280	1878	2371	2686	3058	3925	5427	6106
CCP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.307																			
15	.869	.996																		
20	.891	.978	.999																	
30	.665	.872	.988	.997	.999															
40	.672	.713	.948	.981	.995															
50	.341	.563	.874	.944	.980	.998														
75	.172	.318	.637	.770	.879	.979	.999													
100	.101	.196	.446	.582	.723	.918	.993	.997	.999											
125	.068	.131	.319	.436	.574	.822	.974	.990	.996	.999										
150	.047	.093	.236	.332	.454	.714	.939	.972	.989	.998										
200	.027	.054	.147	.206	.294	.521	.825	.900	.950	.980	.999									
250	.017	.035	.094	.138	.201	.382	.601	.793	.878	.968	.997	.999	.999							
300	.012	.024	.066	.098	.145	.287	.568	.660	.786	.926	.990	.995	.998							
350	.009	.018	.049	.073	.109	.221	.467	.576	.689	.868	.976	.989	.995	.999						
400	.007	.014	.038	.057	.085	.175	.385	.487	.600	.801	.953	.976	.989	.998						
450	.005	.011	.030	.045	.068	.142	.322	.413	.520	.730	.922	.957	.979	.996	.999					
500	.004	.009	.024	.037	.055	.117	.271	.353	.452	.661	.883	.931	.964	.992	.999					
600	.003	.006	.017	.026	.039	.083	.199	.263	.346	.538	.792	.863	.919	.977	.999	.999				

12P1

12P2

Ground-burst

Air-burst

12P2

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.8	28.5	25.4	24.4	23.3	21.3	19.0	18.3	17.5	16.2	14.9	14.5	14.1	13.4	12.7	12.5	12.3	12.0	11.7	11.6
psl	310	201	116	96	79	55	36	31	27	22	17	16	15	13	11	11	11	10	9	8
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	23	34	57	69	85	124	204	243	281	409	627	728	851	1141	1652	1885	2163	2810	3936	4445
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
C	.999																			
S	.941	.992																		
10	.784	.938	.996	.999																
15	.574	.823	.980	.993	.998															
20																				
30	.326	.565	.877	.942	.978	.998														
40	.202	.383	.720	.831	.916	.987	.999													
50	.135	.269	.571	.699	.819	.958	.998	.999												
75	.063	.132	.324	.431	.561	.807	.974	.990	.997											
100	.036	.077	.200	.276	.379	.625	.904	.954	.981	.998										
125	.021	.050	.134	.189	.266	.476	.800	.885	.944	.990	.999									
150	.016	.035	.095	.136	.195	.366	.687	.785	.884	.974	.998	.999								
200	.009	.020	.055	.079	.115	.230	.484	.611	.730	.805	.988	.995	.998							
250	.006	.013	.036	.052	.076	.155	.359	.462	.582	.681	.960	.982	.992	.999						
300	.004	.009	.025	.036	.053	.111	.268	.354	.461	.661	.912	.954	.979	.986						
350	.003	.007	.018	.027	.040	.083	.206	.277	.369	.58	.848	.911	.954	.980	.999					
400	.002	.005	.014	.021	.030	.064	.163	.221	.299	.495	.776	.856	.919	.979	.998	.999				
450	.002	.004	.011	.016	.024	.051	.131	.180	.246	.474	.703	.795	.874	.963	.995	.998	.999			
500	.001	.003	.009	.013	.020	.042	.108	.149	.205	.460	.633	.732	.823	.939	.991	.996	.998			
600	.001	.002	.006	.009	.014	.029	.077	.106	.144	.269	.510	.611	.715	.876	.975	.988	.995	.999		
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.8	28.5	25.4	24.4	23.3	21.3	19.0	18.3	17.5	16.2	14.9	14.5	14.1	13.4	12.7	12.5	12.3	12.0	11.7	11.6
psl	310	201	116	96	79	55	36	31	27	22	17	16	15	13	11	11	11	10	9	8
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	10	15	25	31	39	64	120	150	196	274	433	506	593	738	1151	1314	1506	1951	2724	3072
170	.044	.091	.229	.309	.412	.649	.934	.975	.992	.999										
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
S	.999																			
10	.963	.996																		
15	.920	.959	.999	.999																
20	.841	.868	.987	.995	.999															
30	.379	.624	.907	.957	.984	.998														
40	.219	.438	.767	.863	.934	.989														
50	.161	.313	.622	.741	.848	.964	.999													
75	.076	.156	.364	.472	.599	.925	.984	.995	.999											
100	.044	.091	.229	.309	.412	.649	.934	.975	.992	.999										
125	.038	.069	.153	.212	.292	.498	.848	.929	.973	.997										
150	.020	.042	.110	.153	.214	.385	.746	.854	.937	.992										
200	.011	.024	.063	.099	.129	.243	.555	.694	.821	.980	.997	.999								
250	.007	.015	.041	.059	.084	.164	.412	.544	.686	.897	.990	.996	.999							
300	.005	.011	.029	.041	.059	.119	.312	.426	.563	.812	.972	.998	.996	.999						
350	.004	.014	.021	.030	.044	.088	.242	.338	.461	.720	.941	.973	.983	.996						
400	.003	.006	.016	.023	.034	.064	.192	.273	.391	.632	.899	.949	.977	.996						
450	.002	.005	.013	.019	.027	.054	.155	.224	.317	.552	.848	.915	.952	.981	.999					
500	.002	.004	.010	.015	.022	.044	.128	.186	.267	.482	.792	.875	.934	.986	.999	.999				
600	.001	.003	.007	.010	.015	.031	.091	.134	.196	.372	.678	.781	.868	.964	.996	.999	.999			

12P2

13P0

Ground-burst

Air-burst

[illegible]

13P0

19P2

Ground-burst

Air-burst

1992

KT	.001	.002	.005	.007	.010	.020	.05	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	37.8	35.5	32.4	31.4	30.3	28.3	26.3	25.3	23.2	21.9	21.5	21.1	20.4	19.7	19.5	19.3	19.0	18.7	18.6
Adj	1111	720	416	343	282	196	129	112	98	78	60	56	52	44	41	39	38	36	34
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	15	22	35	42	51	74	110	140	166	231	348	402	467	619	896	1018	1104	1504	2095
CEP	PD	PD	PD	PD	PD	PD	PD	D	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	5	985	.998																
10	757	926	.998	.998	.999														
15	988	750	.948	.979	.993	.998													
20	320	538	.844	.918	.963	.995													
30	160	299	.593	.713	.825	.957	.999												
40	994	183	.407	.520	.649	.884	.985	.994	.998										
50	961	122	.288	.381	.498	.761	.948	.977	.991	.999									
75	.028	.057	.142	.196	.271	.473	.780	.889	.932	.986	.998								
100	.016	.032	.083	.116	.185	.308	.594	.706	.811	.942	.997	.999							
125	.010	.021	.054	.078	.109	.212	.447	.556	.673	.863	.977	.989	.996	.999					
150	.007	.015	.038	.054	.077	.153	.341	.437	.550	.785	.943	.971	.987	.998					
200	.004	.008	.022	.031	.044	.090	.212	.281	.370	.577	.884	.938	.945	.987	.998				
250	.003	.005	.014	.020	.029	.059	.182	.259	.431	.702	.781	.868	.958	.994	.997	.999			
300	.002	.004	.010	.014	.020	.041	.101	.138	.189	.328	.577	.677	.772	.908	.984	.992	.99	.999	
350	.001	.003	.007	.010	.015	.030	.076	.104	.143	.255	.477	.573	.674	.843	.984	.982	.991	.998	
400	.001	.002	.005	.008	.011	.023	.059	.081	.112	.203	.385	.484	.584	.769	.934	.983	.982	.996	.999
450	.001	.002	.004	.006	.009	.019	.047	.064	.090	.184	.330	.411	.505	.695	.895	.937	.946	.992	.999
500	.001	.001	.003	.005	.007	.015	.038	.053	.073	.136	.278	.351	.438	.635	.849	.903	.944	.985	.998
600	.001	.002	.003	.005	.010	.027	.037	.052	.097	.204	.261	.333	.502	.747	.921	.985	.980	.994	.997
KT	.001	.002	.005	.007	.010	.020	.05	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	37.8	35.5	32.4	31.4	30.3	28.3	26.0	25.3	23.2	21.9	21.5	21.1	20.4	19.7	19.5	19.3	19.0	18.7	18.6
Adj	1111	720	416	343	282	196	129	112	98	78	60	56	52	46	41	39	38	36	34
HOB	9	10	16	19	23	32	52	62	74	107	172	204	245	348	487	575	668	883	1258
WR	16	24	39	47	57	81	129	151	178	244	362	415	481	632	952	1092	1260	1650	2311
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	5	989	.999																
10	771	944	.947	.999															
15	527	780	.687	.999	.996														
20	351	593	.987	.946	.979	.997													
30	179	341	.658	.774	.873	.973	.999	.999											
40	105	212	.466	.586	.713	.902	.987	.996	.999										
50	969	142	.336	.440	.564	.797	.964	.985	.994	.999									
75	.031	.066	.169	.232	.318	.533	.823	.898	.949	.990	.999	.998	.999						
100	.018	.038	.100	.133	.196	.356	.647	.752	.846	.955	.995	.998	.999						
125	.011	.024	.065	.092	.131	.248	.497	.606	.717	.887	.991	.991	.996	.999					
150	.008	.017	.046	.065	.093	.181	.395	.484	.536	.737	.953	.976	.999	.999					
200	.004	.010	.026	.037	.054	.107	.243	.317	.409	.614	.853	.911	.952	.988	.999				
250	.003	.006	.017	.024	.035	.070	.164	.218	.289	.465	.727	.810	.881	.962	.996	.998	.999		
300	.002	.004	.012	.017	.024	.043	.118	.159	.213	.357	.606	.700	.789	.915	.989	.995	.998		
350	.001	.003	.009	.012	.018	.036	.088	.119	.162	.278	.503	.596	.694	.853	.974	.988	.995	.999	
400	.001	.002	.007	.009	.014	.029	.068	.093	.127	.223	.418	.507	.604	.782	.950	.974	.988	.998	
450	.001	.002	.005	.007	.011	.022	.058	.074	.102	.181	.351	.442	.525	.709	.917	.954	.977	.995	.999
500	.001	.002	.004	.006	.009	.019	.044	.061	.094	.150	.287	.370	.458	.639	.877	.927	.961	.991	.999
600	.001	.003	.004	.006	.013	.031	.074	.093	.107	.219	.277	.349	.516	.784	.856	.914	.975	.997	.999

19P2

Air-burst

21 P 0

22P 0

Ground-burst

22PD																				
KT	.001	.002	.005	.007	.01C	.020	.05	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00	
Adj VN	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
pai	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	43	55	74	83	93	118	180	178	201	234	344	385	436	546	742	820	934	1177	1588	1787
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5																				
10	.998																			
15	.981	.995	.999																	
20	.925	.974	.996	.999																
30	.727	.857	.958	.976	.987	.997														
40	.535	.690	.863	.910	.945	.983	.997	.999	.999											
50	.394	.540	.743	.809	.868	.947	.989	.994	.997	.999										
75	.203	.300	.474	.548	.628	.777	.919	.950	.972	.992	.999	.999								
100	.121	.184	.309	.368	.438	.580	.788	.842	.895	.963	.993	.996	.998							
125	.080	.123	.213	.258	.313	.443	.646	.720	.792	.902	.975	.987	.993	.998						
150	.056	.087	.154	.188	.231	.338	.523	.598	.679	.819	.941	.965	.981	.995	.999					
200	.032	.050	.090	.111	.139	.210	.348	.411	.486	.611	.828	.881	.925	.974	.996	.998				
250	.021	.032	.059	.073	.092	.141	.242	.291	.352	.481	.695	.764	.833	.931	.996	.999				
300	.014	.023	.041	.051	.065	.100	.176	.214	.262	.379	.573	.649	.727	.857	.958	.976	.987	.997		
350	.011	.017	.031	.038	.048	.075	.133	.163	.202	.298	.471	.544	.625	.774	.917	.948	.971	.992	.999	.999
400	.008	.013	.023	.029	.037	.058	.104	.128	.159	.239	.389	.457	.535	.690	.863	.910	.945	.983	.997	.999
450	.006	.010	.019	.023	.029	.046	.083	.103	.128	.195	.325	.386	.458	.611	.805	.862	.910	.968	.994	.997
500	.005	.008	.015	.019	.024	.038	.068	.084	.105	.161	.274	.328	.394	.540	.743	.809	.868	.947	.989	.994
600	.004	.006	.011	.013	.017	.026	.048	.059	.075	.115	.201	.244	.297	.423	.623	.698	.773	.889	.971	.994
KT	.011	.020	.005	.007	.010	.020	.05	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00	
Adj VN	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
pai	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
HOB	21	27	36	41	46	58	78	88	99	124	169	189	213	264	384	407	458	577	744	877
WR	45	57	77	86	97	123	166	186	210	264	359	401	452	569	773	864	973	1227	1685	1862
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD

Air-burst

[illegible]

29P0

Ground-burst

Air-burst

29P0

KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. Vm	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
psi	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
WJR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WJR	26	13	44	50	56	71	90	107	121	152	207	231	260	328	445	498	561	706	959	1072
CIP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
n	5	.999																		
10	.867	.991	.999	.999																
15	.833	.927	.983	.991	.996	.999														
20	.658	.802	.932	.959	.977	.994	.999													
30	.394	.540	.743	.809	.868	.907	.980	.994	.997	.999										
40	.249	.352	.552	.628	.707	.842	.931	.972	.983	.996	.999									
50	.169	.253	.405	.479	.557	.712	.880	.921	.953	.986	.998	.999								
75	.080	.123	.213	.258	.313	.443	.646	.720	.792	.902	.975	.987	.993	.998						
100	.046	.071	.127	.156	.193	.286	.454	.527	.608	.759	.908	.942	.967	.991	.999					
125	.030	.046	.084	.103	.129	.195	.326	.387	.459	.613	.807	.883	.911	.968	.994	.997	.999			
150	.021	.032	.059	.073	.092	.141	.242	.291	.352	.491	.695	.766	.833	.927	.983	.991	.996	.999		
200	.012	.018	.034	.042	.053	.082	.145	.178	.219	.322	.502	.577	.658	.802	.932	.959	.977	.994	.999	
250	.007	.012	.022	.027	.034	.054	.096	.119	.158	.222	.366	.432	.508	.663	.845	.905	.934	.978	.996	.998
300	.005	.008	.015	.019	.024	.038	.068	.084	.105	.161	.274	.328	.394	.530	.743	.809	.868	.947	.989	.994
350	.004	.006	.011	.014	.018	.028	.050	.063	.079	.122	.211	.233	.310	.440	.642	.716	.789	.900	.975	.994
400	.003	.005	.009	.011	.014	.021	.039	.048	.061	.095	.166	.203	.249	.362	.552	.628	.707	.842	.951	.972
450	.002	.004	.007	.008	.011	.017	.031	.038	.049	.076	.134	.165	.203	.300	.474	.548	.629	.777	.919	.950
500	.002	.003	.005	.007	.009	.014	.023	.031	.040	.062	.111	.136	.169	.253	.409	.479	.557	.712	.880	.921
600	.001	.002	.004	.005	.006	.010	.018	.022	.028	.043	.078	.097	.121	.194	.309	.368	.438	.590	.788	.848
FT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.730	1,303	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. Vm	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
psi	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
WJR	11	14	19	22	25	31	42	47	53	67	90	101	114	144	195	214	245	309	439	479
WJR	29	36	49	55	62	78	105	114	133	167	277	354	486	760	1499	247	616	777	1054	1179
CIP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
n	5																			
10	.990	.995	.999																	
15	.877	.952	.980	.985	.998	.999														
20	.720	.852	.936	.974	.987	.997	.999													
30	.451	.604	.799	.957	.987	.986	.984	.997	.999											
40	.297	.416	.618	.691	.766	.983	.983	.993	.999	.999										
50	.200	.295	.467	.541	.621	.771	.916	.947	.970	.992	.999	.999								
75	.095	.146	.250	.301	.343	.504	.709	.778	.843	.931	.995	.992	.996	.999	.999					
100	.055	.086	.151	.185	.227	.372	.510	.591	.672	.814	.998	.963	.990	.995	.999					
125	.036	.056	.100	.123	.153	.270	.378	.444	.521	.677	.955	.903	.940	.981	.997	.999				
150	.025	.039	.071	.088	.109	.167	.243	.318	.396	.534	.764	.620	.677	.752	.802	.888	.938			
200	.014	.022	.040	.050	.061	.094	.173	.211	.258	.391	.560	.442	.477	.532	.582	.677	.737	.803		
250	.008	.014	.026	.033	.041	.064	.115	.141	.176	.261	.431	.402	.431	.475	.498	.574	.627	.678	.748	.809
300	.006	.010	.019	.023	.027	.045	.081	.101	.126	.191	.313	.300	.331	.364	.394	.457	.487	.518	.594	.677
350	.007	.013	.023	.027	.033	.061	.075	.094	.115	.165	.264	.293	.320	.341	.375	.436	.466	.493	.565	.632
400	.004	.006	.013	.016	.020	.036	.047	.059	.073	.111	.177	.209	.232	.247	.269	.316	.345	.369	.433	.483
450	.003	.004	.009	.010	.013	.027	.046	.054	.066	.104	.163	.195	.218	.240	.264	.316	.342	.368	.430	.484
500	.003	.004	.007	.008	.010	.017	.030	.038	.049	.076	.132	.162	.200	.245	.291	.341	.371	.416	.477	.527
600	.002	.002	.005	.006	.007	.012	.021	.026	.033	.052	.094	.116	.144	.174	.219	.259	.294	.349	.419	.470

29P0

30P0

Ground-burst

[illegible]

Air-burst

[illegible]

30P0

Air-burst

31 P 1

32P2

Ground-burst

Air-burst

32P2

KT	001	002	005	007	010	020	05	07	10	20	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
AD	50.8	48.5	45.4	43.3	41.3	39.0	38.3	37.5	36.2	34.9	34.5	34.1	32.4	32.7	32.5	32.3	32.0	31.7	31.7	31.6
PD	11891	7795	8852	3673	3012	2101	1377	1199	1047	830	687	600	558	494	437	421	406	383	362	355
PD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PD	7	10	16	19	23	32	51	61	72	97	142	163	188	245	349	395	451	579	902	903
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	67%	865	980	986	990															
10	259	463	784	874	939	990	999													
15	127	297	519	537	759	924	992	998	999											
20	07%	149	344	447	569	796	963	996	999											
30	07%	070	174	237	321	533	819	904	950	999										
40	013	040	102	142	198	356	641	761	848	953	994	997	999							
50	012	026	057	094	133	249	491	516	721	883	979	590	996	999						
75	005	012	030	043	067	120	266	359	452	652	874	925	960	991	999	999				
100	003	007	017	024	035	070	161	224	292	460	716	779	871	957	993	997	999			
125	002	004	011	016	023	045	107	151	200	331	566	659	751	891	977	988	995	999		
150	001	003	009	011	016	032	076	109	144	246	447	536	632	804	944	969	985	987		
200	001	002	004	006	009	018	043	062	084	148	288	353	442	521	635	892	936	981	997	999
250	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
300	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
350	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
400	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
450	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
500	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995
600	001	002	004	006	012	028	043	055	055	093	197	250	316	472	704	782	852	943	989	995

32P2

33P4

Ground-burst

Air-burst

33P4

KT	0.01	0.02	0.03	0.07	0.10	0.20	0.50	1.00	2.00	5.00	7.00	10.00	20.00	50.00	70.00
Adj W	59.2	56.7	53.4	52.2	51.0	48.6	45.5	44.5	43.4	42.3	41.3	40.2	39.1	38.0	37.0
Pos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0															
5	347	587	885	946	979	998									
10	103	208	463	586	717	910	992	997	999						
15	048	099	248	335	448	699	937	973	990	999					
20	027	057	149	208	289	506	822	902	956	994					
30	012	026	070	099	143	276	564	684	800	944	936	998	999		
40	007	015	040	057	083	164	382	481	617	826	879	991	997	999	
50	004	009	026	037	054	112	268	337	468	705	838	970	987	998	
75	002	004	012	017	025	052	131	181	251	437	556	842	919	978	998
100	001	002	007	009	014	029	076	107	151	281	366	670	772	916	998
125	001	002	004	006	009	019	050	070	100	192	222	320	404	505	628
150	001	003	004	006	013	035	089	071	138	270	320	404	505	628	770
200	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
250	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
300	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
350	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
400	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
450	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
500	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
550	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909
600	001	002	003	007	023	028	071	081	197	257	333	517	773	848	909

33P4

33P 8

Ground-burst

Air-burst

[illegible]

33P 8

35PI

Ground-burst

Air-burst

35PI

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1,000 2,000 5,000 7,000 10,000 20,000 50,000 70,000
Adj Wt 47.1 45.1 42.4 42.0 41.3 40.0 38.6 38.2 37.8 37.1 36.4 36.2 36.0 35.7 35.3 35.2 35.1 35.0 34.8 34.6
Psi 6006 4178 2730 2374 2071 1637 1273 1178 1094 960 863 822 793 705 692 681 642 644 639 639
HOB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
HR 3 12 19 22 26 35 54 61 71 92 130 147 168 215 298 335 379 482 660 740

CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD
0 .915 .950 .996 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998
5 .374 .600 .869 .928 .966 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
10 .132 .345 .629 .734 .829 .947 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
15 .114 .215 .439 .542 .654 .841 .972 .986 .994 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999
20 .053 .103 .232 .302 .390 .589 .848 .905 .947 .997 .998 .998 .998 .998 .998 .998 .998 .998 .998
30 .030 .060 .139 .195 .247 .403 .679 .765 .842 .942 .994 .994 .994 .994 .994 .994 .994 .994 .994
50 .019 .033 .092 .124 .167 .285 .529 .619 .713 .863 .994 .994 .994 .994 .994 .994 .994 .994 .994
75 .009 .017 .042 .057 .070 .143 .292 .361 .444 .621 .994 .994 .994 .994 .994 .994 .994 .994 .994
100 .005 .010 .024 .033 .045 .082 .173 .226 .286 .511 .994 .994 .994 .994 .994 .994 .994 .994 .994
125 .003 .005 .015 .021 .029 .053 .119 .152 .194 .307 .994 .994 .994 .994 .994 .994 .994 .994 .994
150 .002 .004 .011 .015 .020 .037 .084 .109 .141 .227 .994 .994 .994 .994 .994 .994 .994 .994 .994
200 .001 .002 .006 .008 .012 .021 .049 .063 .082 .136 .994 .994 .994 .994 .994 .994 .994 .994 .994
250 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
300 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
350 .001 .002 .003 .004 .007 .016 .021 .028 .047 .091 .994 .994 .994 .994 .994 .994 .994 .994 .994
400 .001 .002 .002 .003 .005 .012 .016 .018 .036 .070 .994 .994 .994 .994 .994 .994 .994 .994 .994
450 .001 .002 .002 .002 .004 .010 .013 .017 .029 .056 .994 .994 .994 .994 .994 .994 .994 .994 .994
500 .001 .001 .002 .003 .008 .010 .014 .023 .046 .058 .994 .994 .994 .994 .994 .994 .994 .994 .994
600 .001 .001 .001 .002 .006 .007 .010 .016 .032 .041 .994 .994 .994 .994 .994 .994 .994 .994 .994

35PI

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1,000 2,000 5,000 7,000 10,000 20,000 50,000 70,000
Adj Wt 47.1 45.1 42.4 42.0 41.3 40.0 38.6 38.2 37.8 37.1 36.4 36.2 36.0 35.7 35.3 35.2 35.1 35.0 34.8 34.6
Psi 6006 4178 2730 2374 2071 1637 1273 1178 1094 960 863 822 793 705 692 681 642 644 639 639
HOB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
HR 3 12 19 22 26 35 54 61 71 92 130 147 168 215 298 335 379 482 660 740

CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD
0 .915 .950 .996 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998
5 .374 .600 .869 .928 .966 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
10 .132 .345 .629 .734 .829 .947 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
15 .114 .215 .439 .542 .654 .841 .972 .986 .994 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999
20 .053 .103 .232 .302 .390 .589 .848 .905 .947 .997 .998 .998 .998 .998 .998 .998 .998 .998 .998
30 .030 .060 .139 .195 .247 .403 .679 .765 .842 .942 .994 .994 .994 .994 .994 .994 .994 .994 .994
50 .019 .033 .092 .124 .167 .285 .529 .619 .713 .863 .994 .994 .994 .994 .994 .994 .994 .994 .994
75 .009 .017 .042 .057 .070 .143 .292 .361 .444 .621 .994 .994 .994 .994 .994 .994 .994 .994 .994
100 .005 .010 .024 .033 .045 .082 .173 .226 .286 .511 .994 .994 .994 .994 .994 .994 .994 .994 .994
125 .003 .005 .015 .021 .029 .053 .119 .152 .194 .307 .994 .994 .994 .994 .994 .994 .994 .994 .994
150 .002 .004 .011 .015 .020 .037 .084 .109 .141 .227 .994 .994 .994 .994 .994 .994 .994 .994 .994
200 .001 .002 .006 .008 .012 .021 .049 .063 .082 .136 .994 .994 .994 .994 .994 .994 .994 .994 .994
250 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
300 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
350 .001 .002 .003 .004 .007 .016 .021 .028 .047 .091 .994 .994 .994 .994 .994 .994 .994 .994 .994
400 .001 .002 .002 .003 .005 .012 .016 .018 .036 .070 .994 .994 .994 .994 .994 .994 .994 .994 .994
450 .001 .002 .002 .002 .004 .010 .013 .017 .029 .056 .994 .994 .994 .994 .994 .994 .994 .994 .994
500 .001 .001 .002 .003 .008 .010 .014 .023 .046 .058 .994 .994 .994 .994 .994 .994 .994 .994 .994
600 .001 .001 .001 .002 .006 .007 .010 .016 .032 .041 .994 .994 .994 .994 .994 .994 .994 .994 .994

37P6

Ground-burst

Air-burst

37P6

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	87.6	85.1	81.8	80.5	59.3	56.8	53.5	52.3	51.1	48.8	45.8	44.8	43.7	41.8	39.4	38.9	38.2	37.0	35.7	35.3
pel																				
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	2	4	6	7	9	13	21	25	30	44	72	86	103	146	227	275	321	431	627	717
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.144	.282	.583	.739	.826	.961	.998	.999												
10	.038	.081	.206	.283	.386	.531	.911	.960	.986	.999										
15	.017	.037	.099	.140	.199	.374	.771	.912	.983	.999										
20	.010	.021	.057	.081	.118	.235	.508	.832	.931	.993	.998	.999								
30	.004	.009	.026	.037	.055	.114	.278	.572	.901	.993	.999									
40	.002	.005	.015	.021	.031	.066	.169	.332	.549	.851	.921	.966	.995							
50	.002	.003	.009	.014	.020	.043	.112	.222	.406	.725	.827	.908	.982	.999						
75	.001	.002	.004	.006	.009	.019	.052	.107	.211	.456	.571	.695	.886	.985	.998					
100	.001	.002	.003	.005	.011	.030	.042	.062	.126	.295	.388	.502	.734	.938	.975	.989				
125	.001	.002	.003	.007	.019	.027	.040	.083		.202	.273	.368	.586	.856	.929	.945	.993	.999		
150	.001	.002	.005	.013	.019	.028	.058			.146	.200	.273	.465	.756	.859	.920	.980	.998	.999	
200	.001	.001	.003	.007	.011	.018	.033			.088	.119	.166	.302	.566	.694	.790	.922	.988	.998	
250	.001	.001	.002	.005	.007	.010	.021			.056	.078	.110	.207	.421	.543	.648	.829	.961	.980	
300	.001	.001	.001	.003	.005	.007	.015			.039	.055	.078	.150	.320	.426	.525	.722	.913	.951	
350	.001	.002	.004	.005	.011					.029	.041	.058	.113	.248	.338	.426	.620	.849	.906	
400	.001	.002	.003	.004	.008					.022	.031	.045	.088	.197	.273	.350	.530	.777	.849	
450	.001	.001	.002	.003	.007					.018	.025	.036	.070	.160	.223	.280	.451	.703	.786	
500	.001	.002	.003	.005	.014					.014	.020	.029	.057	.132	.186	.243	.390	.633	.722	
600	.001	.001	.001	.002	.004					.010	.014	.020	.040	.094	.134	.177	.293	.510	.601	
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	67.6	65.1	61.8	60.5	59.3	56.8	53.5	52.3	51.1	48.8	45.8	44.8	43.7	41.8	39.4	38.9	38.2	37.0	35.7	35.3
pel																				
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	2	4	6	7	9	13	21	26	31	46	76	91	109	156	245	287	338	461	671	773
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.131	.277	.576	.705	.825	.963	.998	.999												
10	.036	.077	.202	.280	.386	.547	.913	.965	.988	.999										
15	.016	.035	.096	.138	.198	.379	.715	.927	.986	.999										
20	.001	.020	.056	.080	.118	.218	.522	.849	.977	.942	.996	.999								
30	.004	.009	.025	.037	.055	.115	.287	.511	.764	.962	.985	.993	.999							
40	.002	.005	.014	.021	.031	.066	.175	.348	.575	.875	.938	.974	.997	.999						
50	.001	.003	.009	.013	.020	.043	.117	.234	.430	.757	.855	.919	.998	.999						
75	.001	.001	.004	.006	.009	.020	.054	.113	.226	.449	.509	.733	.911	.990	.996	.999				
100	.001	.001	.002	.003	.005	.011	.031	.045	.066	.135	.321	.421	.541	.775	.956	.982	.999			
125	.001	.001	.002	.003	.007	.020	.049	.043	.089	.221	.299	.389	.531	.888	.941	.973	.995			
150	.001	.001	.002	.005	.014	.020	.030	.061	.160	.220	.301	.508	.800	.879	.936	.986	.999	.999		
200	.001	.001	.001	.003	.008	.011	.017	.036	.074	.132	.185	.336	.617	.722	.820	.942	.992	.999		
250	.001	.001	.001	.003	.005	.007	.011	.023	.062	.097	.123	.233	.464	.573	.684	.842	.973	.997		
300	.001	.001	.001	.003	.005	.009	.016	.043	.063	.108	.169	.359	.653	.764	.937	.967				
350	.001	.001	.001	.003	.005	.009	.012	.043	.065	.128	.281	.362	.460	.666	.884	.972				
400	.001	.001	.001	.003	.009	.009	.025	.035	.050	.100	.225	.293	.379	.575	.821	.986				
450	.001	.001	.001	.003	.007	.010	.028	.040	.080	.183	.241	.316	.497	.754	.932					
500	.001	.001	.001	.003	.006	.016	.023	.033	.065	.151	.201	.266	.430	.684	.773					
600	.001	.001	.001	.002	.004	.011	.016	.023	.046	.109	.145	.227	.363	.583	.656					

37P6

37P7

Ground-burst

Air-burst

37P7

RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.000	15.000	20.000	50.000	70.000
Adj Vm	69.3	66.8	63.4	62.2	60.9	58.4	55.1	53.9	52.6	50.2	47.1	44.0	44.8	42.7	40.2	39.3	38.5	37.0	35.4	34.9	
psi											8020	4316	3991	2708	1700	1456	1248	954	711	649	
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WR	2	3	5	6	8	11	19	23	28	40	67	80	96	138	219	259	316	431	640	737	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.119	.237	.515	.641	.769	.938	.996	.999													
10	.031	.066	.172	.239	.311	.567	.873	.938	.976	.997											
15	.014	.030	.081	.115	.166	.320	.636	.757	.863	.973	.999										
20	.008	.017	.047	.067	.098	.198	.445	.567	.699	.901	.991	.997	.999								
30	.004	.008	.021	.030	.045	.094	.236	.320	.431	.682	.931	.970	.989	.999							
40	.002	.004	.012	.017	.026	.054	.142	.198	.276	.489	.810	.895	.952	.993							
50	.001	.003	.008	.011	.015	.035	.093	.132	.188	.355	.673	.786	.881	.976	.998	.999					
75	.001	.001	.003	.005	.007	.016	.043	.061	.093	.180	.407	.521	.649	.862	.982	.993	.998				
100	.001	.002	.003	.004	.005	.009	.024	.031	.051	.106	.255	.346	.457	.698	.928	.966	.988	.998			
125	.001	.002	.003	.004	.006	.016	.023	.033	.070	.176	.241	.328	.448	.838	.909	.962	.993	.999			
150	.001	.001	.001	.001	.002	.004	.011	.016	.023	.049	.126	.175	.243	.430	.734	.829	.915	.980	.998	.999	
200	.001	.001	.001	.001	.001	.002	.006	.009	.013	.028	.073	.103	.147	.276	.542	.654	.781	.922	.989	.995	
250	.001	.001	.001	.001	.001	.001	.004	.006	.008	.018	.046	.068	.097	.188	.401	.503	.638	.829	.964	.983	
300	.001	.001	.001	.001	.001	.001	.003	.004	.006	.013	.033	.048	.068	.135	.302	.390	.515	.722	.919	.956	
350	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
400	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
450	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
500	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
600	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
700	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
800	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
900	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1000	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1100	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1200	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1300	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1400	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1500	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1600	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1700	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1800	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
1900	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2000	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2100	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2200	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2300	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2400	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2500	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2600	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2700	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2800	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
2900	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3000	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3100	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3200	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3300	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3400	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3500	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3600	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3700	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3800	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
3900	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4000	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4100	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4200	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4300	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4400	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4500	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4600	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4700	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4800	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
4900	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
5000	.001	.002	.003	.004	.006	.009	.009	.009	.009	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
5100	.001	.002	.003	.004	.006	.009	.009	.009	.												

38PI

Ground-burst

Air-burst

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.24	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998						.994	.997	.999							
10	.280	.477	.772	.857	.922	.982	.998	.999			.971	.985	.994	.999						
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999	.920	.953	.980	.995	.999					
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996	.525	.609	.719	.859	.962	.979	.989			
30	.037	.073	.155	.222	.293	.467	.726	.809	.879	.961	.385	.461	.570	.735	.900	.938	.965	.990	.999	
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.062	.079	.108	.170	.246	.356	.428	.583	.787	.848
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
300	.001	.001	.002	.003	.004	.007	.014	.017	.025	.043	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
350	.001	.001	.001	.002	.003	.005	.011	.014	.018	.032	.018	.022	.027	.042	.076	.098	.128	.196	.304	.368
400	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
450	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
500	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
600	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998						.994	.997	.999							
10	.280	.477	.772	.857	.922	.982	.998	.999			.971	.985	.994	.999						
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999	.920	.953	.980	.995	.999					
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996	.525	.609	.719	.859	.962	.979	.989			
30	.037	.073	.155	.222	.293	.467	.726	.809	.879	.961	.385	.461	.570	.735	.900	.938	.965	.990	.999	
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.062	.079	.108	.170	.246	.356	.428	.583	.787	.848
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
300	.001	.001	.002	.003	.004	.007	.014	.017	.025	.043	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
350	.001	.001	.001	.002	.003	.005	.011	.014	.018	.032	.018	.022	.027	.042	.076	.098	.128	.196	.304	.368
400	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
450	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
500	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
600	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998						.994	.997	.999							
10	.280	.477	.772	.857	.922	.982	.998	.999			.971	.985	.994	.999						
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999	.920	.953	.980	.995	.999					
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996	.525	.609	.719	.859	.962	.979	.989			
30	.037	.073	.155	.222	.293	.467	.726	.809	.879	.961	.385	.461	.570	.735	.900	.938	.965	.990	.999	
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.062	.079	.108	.170	.246	.356	.428	.583	.787	.848
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
300	.001	.001	.002	.003	.004	.007	.014	.017	.025	.043	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
350	.001	.001	.001	.002	.003	.005	.011	.014	.018	.032	.018	.022	.027	.042	.076	.098	.128	.196	.304	.368
400	.001	.001	.001	.001	.002	.003	.006	.009	.011	.019	.018	.021	.024	.038	.064	.084	.114	.174	.274	.338
450	.001	.001	.001	.001	.002	.003	.006	.009												

Air-burst

38P4

38P7

Ground-burst

Air-burst

38P7

KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,00	20,00	50,00	70,00	100	200	300	400	500	600	700	800	900	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999
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38P7

38P8

Ground-burst

38P4																
KT	Adj W	0.01	0.02	0.05	0.07	0.10	0.20	0.50	1.00	2.00	5.00	7.00	10.00	20.00	50.00	70.00
psi		71.1	69.2	65.9	64.7	63.4	61.8	57.5	55.3	53.0	52.5	49.3	48.2	46.5	44.6	43.8
HOB		2	3	5	5	7	10	16	20	24	35	58	70	85	123	199
W		2	3	5	5	7	10	16	20	24	35	58	70	85	123	199
CEP	PD	PD	PD	PC	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																
5	0.090	-1.32	4.13	5.33	6.72	9.88	9.93	9.97	9.99							
10	0.023	1.50	-1.31	1.84	2.59	4.69	4.83	4.87	4.91							
15	0.10	0.22	0.61	0.87	1.26	2.51	-5.36	6.62	-7.67	9.46		9.97	9.99			
20	0.096	-1.1	0.15	0.50	0.73	1.51	3.50	4.70	6.01	8.38	9.97	9.99	9.99	9.99	9.99	9.99
30	0.013	0.06	0.16	0.23	0.33	0.71	1.82	2.52	3.47	5.86	8.84	9.44	9.78	9.99		
40	0.001	0.003	0.004	0.013	0.019	0.041	1.08	1.52	2.16	4.01	7.30	8.35	9.17	9.86	9.94	
50	0.01	0.002	0.006	0.008	0.012	0.026	0.71	1.01	1.45	2.83	5.81	7.84	8.29	9.56	9.97	9.99
75	0.001	0.001	0.003	0.004	0.005	0.012	0.32	0.66	0.68	1.39	3.31	3.36	5.62	8.02	9.70	9.88
100	0.001	0.001	0.001	0.002	0.003	0.007	0.18	0.25	0.39	0.81	2.05	2.80	3.80	6.19	8.94	9.98
125		0.001	0.001	0.001	0.002	0.004	0.12	0.17	0.25	0.53	1.37	1.91	2.67	4.70	7.85	9.73
150		0.001	0.001	0.001	0.001	0.003	0.08	0.12	0.17	0.37	0.98	1.38	1.95	3.61	6.10	7.79
200			0.001	0.001	0.001	0.002	0.05	0.07	0.10	0.21	0.56	0.80	1.16	2.26	4.77	5.92
250				0.001	0.001	0.001	0.03	0.04	0.06	0.14	0.37	0.52	0.76	1.52	3.45	5.63
300					0.001	0.002	0.003	0.004	0.009	0.026	0.07	0.13	0.23	0.53	1.09	2.57
350						0.001	0.002	0.002	0.003	0.007	0.019	0.07	0.14	0.34	0.84	1.97

Air-burst

[illegible]

39P0

Ground-burst

Air-burst

39P0

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.506	.707	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj W	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
PMI	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	14	18	24	27	31	39	53	59	66	83	113	127	143	180	244	273	307	387	526	588
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.980	.995	.999																	
5	.719	.850	.955	.974	.986	.997	.999													
10	.650	.800	.900	.956	.986	.996	.999	.997	.998											
15	.602	.798	.886	.906	.956	.986	.999	.997	.998											
20	.591	.815	.814	.690	.765	.864	.999	.983	.991	.998										
30	.144	.217	.358	.422	.497	.653	.638	.889	.930	.977	.996	.998	.999							
40	.084	.129	.223	.270	.327	.461	.665	.738	.808	.912	.979	.989	.994	.999						
50	.055	.085	.150	.184	.226	.331	.514	.590	.670	.812	.937	.962	.980	.995	.999					
75	.025	.039	.079	.087	.109	.167	.282	.338	.404	.552	.754	.819	.876	.951	.990	.995	.998	.997	.999	
100	.014	.022	.040	.050	.063	.098	.172	.210	.257	.372	.564	.640	.719	.850	.955	.974	.986	.997	.999	
125	.009	.014	.026	.032	.041	.064	.114	.141	.174	.260	.420	.490	.563	.724	.887	.927	.957	.987	.998	.999
150	.006	.010	.018	.023	.029	.045	.081	.100	.125	.190	.318	.379	.450	.602	.758	.856	.906	.966	.994	.997
200	.004	.006	.010	.013	.016	.024	.047	.058	.073	.113	.196	.238	.291	.415	.614	.650	.765	.884	.969	.983
250	.002	.004	.007	.008	.010	.016	.030	.038	.047	.074	.131	.161	.199	.274	.466	.539	.620	.770	.915	.947
300	.002	.002	.005	.006	.007	.011	.021	.026	.033	.052	.093	.115	.144	.217	.358	.422	.497	.653	.838	.889
350	.001	.002	.003	.004	.005	.008	.015	.019	.024	.039	.070	.086	.104	.165	.280	.335	.401	.548	.751	.816
400	.001	.001	.003	.003	.004	.006	.012	.015	.019	.030	.054	.067	.084	.123	.223	.270	.327	.461	.655	.738
450	.001	.001	.002	.003	.003	.005	.009	.012	.015	.024	.043	.053	.067	.104	.182	.221	.271	.389	.585	.661
500	.001	.001	.002	.002	.003	.004	.008	.010	.012	.019	.035	.043	.055	.085	.150	.184	.226	.331	.514	.590
600	.001	.001	.001	.001	.002	.003	.005	.007	.008	.023	.024	.030	.038	.060	.107	.131	.164	.246	.400	.469
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj W	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
PMI	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10B	7	9	12	14	16	20	27	30	34	42	58	64	73	91	124	139	156	197	267	299
W	15	19	25	29	32	40	55	61	69	87	118	132	144	188	255	285	321	404	549	614
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.984	.996	.999																	
5	.746	.870	.963	.979	.993	.997	.999													
10	.677	.831	.921	.976	.990	.997	.999	.999	.999											
15	.631	.841	.843	.718	.790	.901	.975	.986	.993	.996										
20	.155	.243	.341	.449	.575	.641	.853	.905	.942	.981	.997	.998	.999							
30	.091	.140	.240	.390	.530	.648	.893	.954	.984	.996	.999	.999	.999	.999						
40	.059	.097	.162	.198	.244	.354	.613	.698	.835	.948	.970	.984	.996	.999	.999					
50	.027	.047	.074	.094	.114	.147	.343	.361	.439	.541	.700	.841	.894	.932	.946	.998	.999	.997		
75	.015	.024	.044	.054	.064	.084	.196	.226	.276	.396	.593	.669	.746	.870	.963	.979	.999			
100	.009	.015	.024	.034	.044	.054	.126	.156	.186	.276	.446	.518	.598	.751	.904	.939	.965	.990	.998	.999
125	.007	.011	.020	.025	.031	.041	.104	.124	.144	.214	.340	.403	.477	.631	.821	.876	.920	.972	.995	.998
150	.004	.007	.014	.018	.024	.034	.084	.104	.124	.194	.304	.364	.434	.584	.744	.814	.874	.934	.974	.996
200	.003	.004	.007	.009	.011	.014	.034	.044	.054	.084	.144	.174	.214	.284	.414	.484	.554	.624	.724	.824
250	.002	.003	.004	.005	.006	.008	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
300	.002	.003	.004	.005	.006	.008	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
350	.001	.002	.003	.004	.005	.006	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
400	.001	.002	.003	.004	.005	.006	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
450	.001	.002	.003	.004	.005	.006	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
500	.001	.002	.003	.004	.005	.006	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724
600	.001	.002	.003	.004	.005	.006	.024	.034	.044	.054	.104	.124	.144	.184	.284	.354	.424	.524	.624	.724

39P0

Air-burst

39P9

40P8

Ground-burst

Air-burst

[illegible]

40P8

41P6

Ground-burst

	KT	AD	WN	psl	HR	WB	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
0	0.001	0.001	0.002	0.005	0.007	0.010	0.020	0.05	0.07	0.10	0.20	0.500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000	100,000	150,000	200,000	250,000	300,000	350,000	400,000	450,000	500,000	550,000	600,000	650,000	700,000	750,000	800,000	850,000	900,000	950,000	1,000,000	1,050,000	1,100,000	1,150,000	1,200,000	1,250,000	1,300,000	1,350,000	1,400,000	1,450,000	1,500,000	1,550,000	1,600,000	1,650,000	1,700,000	1,750,000	1,800,000	1,850,000	1,900,000	1,950,000	2,000,000	2,050,000	2,100,000	2,150,000	2,200,000	2,250,000	2,300,000	2,350,000	2,400,000	2,450,000	2,500,000	2,550,000	2,600,000	2,650,000	2,700,000	2,750,000	2,800,000	2,850,000	2,900,000	2,950,000	3,000,000	3,050,000	3,100,000	3,150,000	3,200,000	3,250,000	3,300,000	3,350,000	3,400,000	3,450,000	3,500,000	3,550,000	3,600,000	3,650,000	3,700,000	3,750,000	3,800,000	3,850,000	3,900,000	3,950,000	4,000,000	4,050,000	4,100,000	4,150,000	4,200,000	4,250,000	4,300,000	4,350,000	4,400,000	4,450,000	4,500,000	4,550,000	4,600,000	4,650,000	4,700,000	4,750,000	4,800,000	4,850,000	4,900,000	4,950,000	5,000,000	5,050,000	5,100,000	5,150,000	5,200,000	5,250,000	5,300,000	5,350,000	5,400,000	5,450,000	5,500,000	5,550,000	5,600,000	5,650,000	5,700,000	5,750,000	5,800,000	5,850,000	5,900,000	5,950,000	6,000,000	6,050,000	6,100,000	6,150,000	6,200,000	6,250,000	6,300,000	6,350,000	6,400,000	6,450,000	6,500,000	6,550,000	6,600,000	6,650,000	6,700,000	6,750,000	6,800,000	6,850,000	6,900,000	6,950,000	7,000,000	7,050,000	7,100,000	7,150,000	7,200,000	7,250,000	7,300,000	7,350,000	7,400,000	7,450,000	7,500,000	7,550,000	7,600,000	7,650,000	7,700,000	7,750,000	7,800,000	7,850,000	7,900,000	7,950,000	8,000,000	8,050,000	8,100,000	8,150,000	8,200,000	8,250,000	8,300,000	8,350,000	8,400,000	8,450,000	8,500,000	8,550,000	8,600,000	8,650,000	8,700,000	8,750,000	8,800,000	8,850,000	8,900,000	8,950,000	9,000,000	9,050,000	9,100,000	9,150,000	9,200,000	9,250,000	9,300,000	9,350,000	9,400,000	9,450,000	9,500,000	9,550,000	9,600,000	9,650,000	9,700,000	9,750,000	9,800,000	9,850,000	9,900,000	9,950,000	10,000,000	10,050,000	10,100,000	10,150,000	10,200,000	10,250,000	10,300,000	10,350,000	10,400,000	10,450,000	10,500,000	10,550,000	10,600,000	10,650,000	10,700,000	10,750,000	10,800,000	10,850,000	10,900,000	10,950,000	11,000,000	11,050,000	11,100,000	11,150,000	11,200,000	11,250,000	11,300,000	11,350,000	11,400,000	11,450,000	11,500,000	11,550,000	11,600,000	11,650,000	11,700,000	11,750,000	11,800,000	11,850,000	11,900,000	11,950,000	12,000,000	12,050,000	12,100,000	12,150,000	12,200,000	12,250,000	12,300,000	12,350,000	12,400,000	12,450,000	12,500,000	12,550,000	12,600,000	12,650,000	12,700,000	12,750,000	12,800,000	12,850,000	12,900,000	12,950,000	13,000,000	13,050,000	13,100,000	13,150,000	13,200,000	13,250,000	13,300,000	13,350,000	13,400,000	13,450,000	13,500,000	13,550,000	13,600,000	13,650,000	13,700,000	13,750,000	13,800,000	13,850,000	13,900,000	13,950,000	14,000,000	14,050,000	14,100,000	14,150,000	14,200,000	14,250,000	14,300,000	14,350,000	14,400,000	14,450,000	14,500,000	14,550,000	14,600,000	14,650,000	14,700,000	14,750,000	14,800,000	14,850,000	14,900,000	14,950,000	15,000,000	15,050,000	15,100,000	15,150,000	15,200,000	15,250,000	15,300,000	15,350,000	15,400,000	15,450,000	15,500,000	15,550,000	15,600,000	15,650,000	15,700,000	15,750,000	15,800,000	15,850,000	15,900,000	15,950,000	16,000,000	16,050,000	16,100,000	16,150,000	16,200,000	16,250,000	16,300,000	16,350,000	16,400,000	16,450,000	16,500,000	16,550,000	16,600,000	16,650,000	16,700,000	16,750,000	16,800,000	16,850,000	16,900,000	16,950,000	17,000,000	17,050,000	17,100,000	17,150,000	17,200,000	17,250,000	17,300,000	17,350,000	17,400,000	17,450,000	17,500,000	17,550,000	17,600,000	17,650,000	17,700,000	17,750,000	17,800,000	17,850,000	17,900,000	17,950,000	18,000,000	18,050,000	18,100,000	18,150,000	18,200,000	18,250,000	18,300,000	18,350,000	18,400,000	18,450,000	18,500,000	18,550,000	18,600,000	18,650,000	18,700,000	18,750,000	18,800,000	18,850,000	18,900,000	18,950,000	19,000,000	19,050,000	19,100,000	19,150,000	19,200,000	19,250,000	19,300,000	19,350,000	19,400,000	19,450,000	19,500,000	19,550,000	19,600,000	19,650,000	19,700,000	19,750,000	19,800,000	19,850,000	19,900,000	19,950,000	20,000,000	20,050,000	20,100,000	20,150,000	20,200,000	20,250,000	20,300,000	20,350,000	20,400,000	20,450,000	20,500,000	20,550,000	20,600,000	20,650,000	20,700,000	20,750,000	20,800,000	20,850,000	20,900,000	20,950,000	21,000,000	21,050,000	21,100,000	21,150,000	21,200,000	21,250,000	21,300,000	21,350,000	21,400,000	21,450,000	21,500,000	21,550,000	21,600,000	21,650,000	21,700,000	21,750,000	21,800,000	21,850,000	21,900,000	21,950,000	22,000,000	22,050,000	22,100,000	22,150,000	22,200,000	22,250,000	22,300,000	22,350,000	22,400,000	22,450,000	22,500,000	22,550,000	22,600,000	22,650,000	22,700,000	22,750,000	22,800,000	22,850,000	22,900,000	22,950,000	23,000,000	23,050,000	23,100,000	23,150,000	23,200,000	23,250,000	23,300,000	23,350,000	23,400,000	23,450,000	23,500,000	23,550,000	23,600,000	23,650,000	23,700,000	23,750,000	23,800,000	23,850,000	23,900,000	23,950,000	24,000,000	24,050,000	24,100,000	24,150,000	24,200,000	24,250,000	24,300,000	24,350,000	24,400,000	24,450,000	24,500,000	24,550,000	24,600,000	24,650,000	24,700,000	24,750,000	24,800,000	24,850,000	24,900,000	24,950,000	25,000,000	25,050,000	25,100,000	25,150,000	25,200,000	25,250,000	25,300,000	25,350,000	25,400,000	25,450,000	25,500,000	25,550,000	25,600,000	25,650,000	25,700,000	25,750,000	25,800,000	25,850,000	25,900,000	25,950,000	26,000,000	26,050,000	26,100,000	26,150,000	26,200,000	26,250,000	26,300,000	26,350,000	26,400,000	26,450,000	26,500,000	26,550,000	26,600,000	26,650,000	26,700,000	26,750,000	26,800,000	26,850,000	26,900,000	26,950,000	27,000,000	27,050,000	27,100,000	27,150,000	27,200,000	27,250,000	27,300,000	27,350,000	27,400,000	27,450,000	27,500,000	27,550,000	27,600,000	27,650,000	27,700,000	27,750,000	27,800,000	27,850,000	27,900,000	27,950,000	28,000,000	28,050,000	28,100,000	28,150,000	28,200,000	28,250,000	28,300,000	28,350,000	28,400,000	28,450,000	28,500,000	28,550,000	28,600,000	28,650,000	28,700,000	28,750,000	28,800,000	28,850,000	28,900,000	28,950,000	29,000,000	29,050,000	29,100,000	29,150,000	29,200,000	29,250,000	29,300,000	29,350,000	29,400,000	29,450,000	29,500,000	29,550,000	29,600,000	29,650,000	29,700,000	29,750,000	29,800,000	29,850,000	29,900,000	29,950,000	30,000,000	30,050,000	30,100,000	30,150,000	30,200,000	30,250,000	30,300,000	30,350,000	30,400,000	30,450,000	30,500,000	30,550,000	30,600,000	30,650,000	30,700,000	30,750,000	30,800,000	30,850,000	30,900,000	30,950,000	31,000,000	31,050,000	31,100,000	31,150,000	31,200,000	31,250,000	31,300,000	31,350,000	31,400,000	31,450,000	31,500,000	31,550,000	31,600,000	31,650,000	31,700,000	31,750,000	31,800,000	31,850,000	31,900,000	31,950,000	32,000,000	32,050,000	32,100,000	32,150,000	32,200,000	32,250,000	32,300,000	32,350,000	32,400,000	32,450,000	32,500,000	32,550,000	32,600,000	32,650,000	32,700,000	32,750,000	32,800,000	32,850,000	32,900,000	32,950,000	33,000,000	33,050,000	33,100,000	33,150,000	33,200,000	33,250,000	33,300,000	33,350,000	33,400,000	33,450,000	33,500,000	33,550,000	33,600,000	33,650,000	33,700,000	33,750,000	33,800,000	33,850,000	33,900,000	33,950,000	34,000,000	34,050,000	34,100,000	34,150,000	34,200,000	34,250,000	34,300,000	34,350,000	34,400,000	34,450,000	34,500,000	34,550,000	34,600,000	34,650,000	34,700,000	34,750,000	34,800,000	34,850,000	34,900,000	34,950,000	35,000,000	35,050,000	35,100,000	35,150,000	35,200,000	35,250,000	35,300,000	35,350,000	35,400,000	35,450,000	35,500,000	35,550,000	35,600,000	35,650,000	35,700,000	35,750,000	35,800,000	35,850,000	35,900,000	35,950,000	36,000,000	36,050,000	36,100,000	36,150,000	36,200,000	36,250,000	36,300,000	36,350,000	36,400,000	36,450,000	36,500,000	36,550,000	36,600,000	36,650,000	36,700,000	36,750,000	36,800,000	36,850,000	36,900,000	36,950,000	37,000,000	37,050,000	37,100,000	37,150,000	37,200,000	37,250,000	37,300,000	37,350,000	37,400,000	37,450,000	37,500,000	37,550,000	37,600,000	37,650,000	37,700,000	37,750,000	37,800,000	37,850,000	37,900,000	37,950,000	38,000,000	38,050,000	38,100,000	38,150,000	38,200,000	38,250,000	38,300,000	38,350,000	38,400,000	38,450,000	38,500,000	38,550,000	38,600,000	38,650,000	38,700,000	38,750,000	38,800,000	38,850,000	38,900,000	

Air-burst

ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
ET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68																															

42P6

Ground-burst

Air-burst

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Wt	72.6	70.1	66.8	65.5	64.3	61.8	58.5	57.3	56.1	53.8	50.8	49.8	48.7	46.8	44.8	43.9	43.2	42.0	40.7	40.3
Psi												9784	8078	5703	3814	3348	2947	2374	1885	1757
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	2	3	4	5	6	9	15	18	22	33	53	63	76	108	167	195	230	311	456	523
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.081	.166	.387	.503	.637	.864	.986	.995	.999											
10	.021	.045	.119	.167	.238	.332	.483	.622	.783	.824										
15	.009	.020	.055	.079	.114	.227	.495	.819	.767	.925	.994	.998	.999							
20	.005	.011	.031	.045	.066	.136	.326	.830	.556	.799	.970	.988	.996							
30	.002	.005	.014	.020	.030	.063	.183	.226	.312	.536	.842	.915	.962	.984						
40	.001	.003	.008	.012	.017	.036	.096	.135	.192	.318	.670	.781	.875	.972	.998					
50	.001	.002	.005	.007	.011	.023	.063	.089	.128	.250	.520	.618	.757	.822	.992	.997				
75	.001	.002	.003	.005	.010	.028	.041	.060	.121	.286	.377	.489	.722	.833	.967	.986	.998			
100	.001	.002	.003	.006	.016	.023	.034	.071	.175	.237	.321	.529	.813	.887	.941	.987	.994	.999		
125	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998		
150	.001	.001	.003	.007	.010	.015	.032	.082	.115	.161	.231	.553	.658	.762	.910	.986	.993			
200	.001	.001	.001	.004	.006	.009	.018	.047	.068	.094	.179	.372	.666	.573	.772	.939	.968			
250	.001	.001	.001	.003	.006	.012	.031	.043	.062	.119	.281	.336	.428	.628	.856	.913				
300	.001	.002	.003	.004	.008	.021	.030	.043	.085	.151	.250	.325	.505	.759	.835					
350	.001	.002	.003	.006	.016	.022	.032	.063	.144	.191	.253	.408	.659	.748						
400	.001	.001	.002	.005	.012	.017	.025	.049	.113	.150	.201	.334	.569	.661						
450	.001	.001	.001	.002	.004	.010	.019	.038	.090	.121	.163	.276	.491	.581						
500	.001	.001	.001	.003	.008	.011	.016	.031	.074	.100	.135	.231	.424	.511						
550	.001	.001	.001	.002	.005	.008	.011	.022	.052	.070	.096	.168	.322	.397						
600																				
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Wt	72.6	70.1	66.8	65.5	64.3	61.8	58.5	57.3	56.1	53.8	50.8	49.8	48.7	46.8	44.8	43.9	43.2	42.0	40.7	40.3
Psi												9784	8078	5703	3814	3348	2947	2374	1885	1757
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	2	3	4	5	6	9	15	18	22	33	53	63	76	108	167	195	230	311	456	523
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.071	.153	.370	.486	.622	.859	.986	.996	.999											
10	.013	.041	.113	.159	.228	.425	.764	.865	.937	.991										
15	.008	.019	.052	.075	.110	.223	.496	.623	.754	.931	.395	.998	.999							
20	.005	.012	.029	.043	.064	.131	.326	.434	.564	.810	.974	.991	.987							
30	.002	.005	.013	.019	.029	.062	.164	.224	.319	.549	.857	.927	.963	.986						
40	.001	.003	.007	.011	.016	.035	.096	.137	.196	.360	.601	.801	.892	.978	.998					
50	.001	.002	.005	.007	.010	.023	.063	.090	.131	.258	.541	.662	.781	.938	.996	.999				
75	.001	.002	.003	.005	.010	.029	.041	.061	.126	.266	.301	.394	.515	.751	.947	.978	.980	.999		
100	.001	.002	.003	.006	.016	.023	.035	.073	.195	.252	.342	.561	.842	.905	.955	.991	.999			
125	.001	.001	.002	.004	.010	.015	.022	.045	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999		
150	.001	.001	.001	.003	.007	.011	.016	.033	.098	.122	.172	.316	.591	.697	.798	.931	.990	.996		
200	.001	.001	.001	.001	.004	.006	.009	.019	.050	.071	.102	.195	.405	.504	.615	.810	.956	.978		
250	.001	.001	.001	.001	.003	.004	.006	.012	.033	.046	.066	.130	.286	.368	.466	.672	.899	.935		
300	.001	.001	.001	.001	.002	.003	.004	.008	.023	.032	.047	.093	.210	.275	.359	.543	.870	.870		
350	.001	.001	.001	.001	.001	.002	.003	.006	.017	.024	.035	.069	.160	.212	.280	.449	.706	.701		
400	.001	.001	.001	.001	.001	.002	.003	.005	.013	.018	.027	.053	.125	.167	.224	.360	.617	.701		
450	.001	.001	.001	.001	.001	.002	.003	.004	.010	.015	.021	.042	.101	.135	.182	.307	.537	.630		
500	.001	.001	.001	.001	.001	.001	.001	.001	.004	.012	.017	.035	.082	.111	.150	.254	.469	.554		
550	.001	.001	.001	.001	.001	.001	.001	.001	.006	.019	.012	.024	.059	.073	.103	.183	.363	.440		
600																				

42P6

48P9

Ground-burst

Air-burst

48P9

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	91.5	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	0
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.023	.050	.132	.195	.260	.469	.801	.891	.932	.994										
10	.006	.013	.035	.050	.074	.152	.360	.472	.604	.842	.982	.994	.998							
15	.001	.006	.016	.023	.034	.071	.183	.253	.349	.530	.889	.947	.980	.998						
20	.001	.003	.009	.013	.019	.041	.108	.153	.218	.404	.736	.862	.922	.986	.999					
30	.001	.001	.004	.006	.009	.018	.050	.072	.104	.210	.467	.591	.722	.814	.993	.998				
40	.001	.002	.003	.005	.010	.029	.041	.060	.125	.304	.405	.529	.779	.964	.987	.996				
50	.001	.001	.002	.003	.007	.018	.027	.039	.082	.209	.286	.387	.535	.709	.938	.984	.998			
75	.001	.001	.001	.001	.003	.008	.012	.019	.038	.100	.141	.201	.375	.697	.807	.894	.960	.999		
100	.001	.001	.001	.001	.002	.005	.007	.010	.021	.058	.082	.119	.235	.504	.625	.743	.922	.993	.997	
125					.001	.003	.004	.006	.014	.037	.054	.078	.159	.367	.576	.602	.874	.975	.990	
150					.001	.002	.003	.004	.010	.026	.038	.055	.114	.275	.366	.481	.722	.939	.972	
200					.001	.001	.002	.002	.005	.015	.021	.031	.066	.167	.229	.314	.530	.826	.900	
250					.001	.001	.001	.002	.003	.009	.014	.020	.043	.111	.155	.217	.340	.692	.794	
300					.001	.001	.001	.001	.002	.007	.010	.014	.030	.079	.111	.157	.293	.546	.681	
350					.001	.001	.001	.002	.005	.007	.010	.022	.058	.083	.118	.227	.467	.577		
400					.001	.001	.001	.001	.001	.004	.005	.008	.017	.045	.064	.092	.179	.386	.468	
450					.001	.001	.001	.001	.001	.003	.004	.006	.013	.036	.051	.076	.145	.322	.414	
500					.001	.001	.001	.001	.001	.001	.002	.003	.005	.011	.029	.042	.080	.119	.272	
600					.001	.001	.001	.001	.001	.001	.002	.002	.004	.008	.020	.029	.042	.085	.199	
700					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
800					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
900					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1000					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1100					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1200					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1300					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1400					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1500					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1600					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1700					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1800					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
1900					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2000					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2100					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2200					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2300					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2400					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2500					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2600					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2700					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2800					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
2900					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	
3000					.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	

48P9

Ground-burst

Air-burst

[illegible]

11Q7

Ground-burst

Air-burst

11Q7

KT	001	002	005	007	010	020	05	07	10	20	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj W	23.1	22.2	20.9	20.5	20.0	19.1	17.4	17.4	16.0	14.9	14.5	14.0	13.3	12.3	12.0	11.6	11.0	10.3	10.1	10.1
psi	133	94	80	51	42	37	34	31	28	25	23	21	19	17	16	15	14	13	12	11
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR	19	54	81	95	111	152	231	269	315	410	634	742	876	1204	1821	2113	2471	3329	4880	5598
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	993	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	974	987	993	995	995	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	922	967	987	990	992	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996
20	814	928	976	983	988	992	995	995	996	996	996	996	996	996	996	996	996	996	996	996
30	622	744	830	854	870	886	897	904	914	925	936	946	956	966	976	986	996	996	996	996
40	447	618	843	898	935	972	989	991	993	994	995	996	996	996	996	996	996	996	996	996
50	326	502	748	820	880	943	982	987	990	993	995	996	996	996	996	996	996	996	996	996
75	167	283	504	602	698	843	950	967	978	986	990	992	993	995	996	996	996	996	996	996
100	099	175	345	428	525	713	891	928	954	979	990	992	993	995	996	996	996	996	996	996
125	065	117	243	310	334	581	809	866	914	963	985	989	992	994	995	996	996	996	996	996
150	046	083	178	231	300	469	718	795	861	940	978	985	989	993	995	996	996	996	996	996
200	026	048	106	140	187	313	546	639	731	863	935	970	980	987	994	996	996	996	996	996
250	017	031	070	093	126	218	413	502	601	776	916	946	965	984	992	993	994	995	996	996
300	012	022	049	066	090	159	317	396	489	678	863	910	943	976	990	992	993	995	996	996
350	003	016	036	049	067	120	248	316	399	585	801	854	913	974	986	989	992	994	995	995
400	007	012	024	038	052	094	179	256	329	503	733	812	875	948	982	987	990	993	995	995
450	005	010	022	030	041	075	161	210	274	433	669	755	832	927	976	983	988	992	994	995
500	004	008	018	024	034	062	134	175	230	374	607	698	785	903	965	978	985	991	994	995
600	003	006	013	017	023	043	096	126	169	284	533	590	689	844	949	966	977	988	993	994
KT	001	002	005	007	010	020	05	07	10	20	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj W	21.1	21.2	20.7	20.5	20.0	19.1	17.4	17.4	16.0	14.9	14.5	14.0	13.3	12.3	12.0	11.6	11.0	10.3	10.1	10.1
psi	113	74	60	51	42	37	34	31	28	25	23	21	19	17	16	15	14	13	12	11
HOB	24	31	43	49	55	71	99	111	127	162	232	269	314	455	731	902	1255	1580	2507	2948
HR	52	70	104	120	140	184	279	322	375	503	765	902	1073	1408	2306	2604	3170	4320	6419	7195
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	986	992	994	995	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	964	983	991	993	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
20	921	965	986	987	992	994	995	995	996	996	996	996	996	996	996	996	996	996	996	996
30	780	894	964	975	983	990	994	994	995	995	995	995	995	995	995	995	995	995	995	995
40	620	785	921	947	965	983	992	993	993	993	993	993	993	993	993	993	993	993	993	993
50	483	664	857	902	936	971	988	990	992	994	995	996	996	996	996	996	996	996	996	996
75	270	420	657	759	813	913	970	983	985	991	994	995	995	995	995	995	995	995	995	995
100	166	274	482	570	663	818	915	956	971	985	992	994	994	994	994	994	994	994	994	994
125	111	187	356	436	527	706	841	919	947	976	990	993	993	993	993	993	993	993	993	993
150	079	137	269	317	419	599	812	964	912	963	986	997	997	997	997	997	997	997	997	997
200	045	090	165	212	273	424	661	742	816	934	973	981	987	990	995	995	995	995	995	995
250	029	072	110	144	188	307	475	614	773	845	957	963	979	987	994	994	994	994	994	994
300	021	057	074	103	136	220	417	502	635	764	917	927	947	955	962	966	966	966	966	966
350	015	037	058	077	103	176	314	411	501	640	824	839	850	879	941	941	941	941	941	941
400	012	021	045	060	080	139	272	347	422	524	724	747	760	824	911	911	911	911	911	911
450	009	017	036	048	064	112	224	283	357	444	644	667	680	760	867	867	867	867	867	867
500	007	013	028	039	052	102	210	270	335	424	624	647	660	740	847	847	847	847	847	847
600	005	009	020	027	037	065	135	175	227	361	608	630	643	735	812	812	812	812	812	812

11Q7

12Q7

Ground-burst

Air-burst

KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.9755	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.983	.988	.990	.993	.995	.995	.996	.996	.996	.996
150	.338	.270	.152	.199	.261	.417	.667	.751	.826	.922	.974	.982	.987	.992	.994	.995	.996	.996	.996	.996
200	.222	.141	.090	.119	.160	.272	.492	.585	.681	.836	.945	.963	.975	.987	.993	.994	.995	.995	.996	.996
250	.114	.028	.059	.079	.107	.187	.364	.449	.544	.750	.908	.932	.956	.979	.991	.992	.993	.995	.996	.996
300	.010	.014	.041	.056	.076	.136	.276	.348	.436	.625	.837	.888	.927	.968	.987	.995	.999	.999	.999	.999
350	.007	.013	.031	.041	.056	.102	.214	.275	.351	.530	.767	.834	.889	.951	.983	.987	.990	.993	.995	.995
400	.006	.010	.024	.032	.044	.080	.170	.221	.287	.450	.695	.775	.844	.929	.976	.983	.988	.992	.995	.995
450	.004	.008	.019	.025	.035	.064	.138	.180	.237	.383	.626	.711	.793	.907	.968	.978	.985	.991	.994	.994
500	.004	.007	.015	.021	.028	.052	.114	.150	.208	.328	.561	.652	.741	.870	.958	.972	.981	.989	.993	.994
600	.002	.005	.011	.014	.020	.036	.081	.107	.144	.246	.451	.541	.637	.798	.930	.954	.970	.985	.992	.993
KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.9755	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.983	.988	.990	.993	.995	.995	.996	.996	.996	.996
150	.338	.270	.152	.199	.261	.417	.667	.751	.826	.922	.974	.982	.987	.992	.994	.995	.996	.996	.996	.996
200	.222	.141	.090	.119	.160	.272	.492	.585	.681	.836	.945	.963	.975	.987	.993	.994	.995	.995	.996	.996
250	.114	.028	.059	.079	.107	.187	.364	.449	.544	.750	.908	.932	.956	.979	.991	.992	.993	.995	.996	.996
300	.010	.014	.041	.056	.076	.136	.276	.348	.436	.625	.837	.888	.927	.968	.987	.995	.999	.999	.999	.999
350	.007	.013	.031	.041	.056	.102	.214	.275	.351	.530	.767	.834	.889	.951	.983	.987	.990	.993	.995	.995
400	.006	.010	.024	.032	.044	.080	.170	.221	.287	.450	.695	.775	.844	.929	.976	.983	.988	.992	.995	.995
450	.004	.008	.019	.025	.035	.064	.138	.180	.237	.383	.626	.711	.793	.907	.968	.978	.985	.991	.994	.994
500	.004	.007	.015	.021	.028	.052	.114	.150	.208	.328	.561	.652	.741	.870	.958	.972	.981	.989	.993	.994
600	.002	.005	.011	.014	.020	.036	.081	.107	.144	.246	.451	.541	.637	.798	.930	.954	.970	.985	.992	.993
KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.9755	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.983	.988	.990	.993	.995	.995	.996	.996	.996	.996
150	.338	.270	.152	.199	.261	.417	.667	.751	.826	.922	.974	.982	.987	.992	.994	.995	.996	.996	.996	.996
200	.222	.141	.090	.119	.160	.272	.492	.585	.681	.836	.945	.963	.975	.987	.993	.994	.995	.995	.996	.996
250	.114	.028	.059	.079	.107	.187	.364	.449	.544	.750	.908</									

13Q7

Ground-burst

Air-burst

FT	001	002	005	007	010	020	035	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.991	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.874	.967	.982	.987	.990	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.751	.883	.962	.975	.983	.990	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.512	.702	.886	.925	.952	.979	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.348	.529	.771	.839	.894	.955	.984	.988	.991	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995
50	.246	.398	.647	.734	.813	.917	.973	.981	.987	.992	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995
75	.121	.211	.404	.431	.592	.771	.910	.947	.966	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
100	.071	.127	.261	.312	.419	.608	.828	.881	.924	.968	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
125	.046	.094	.180	.213	.302	.472	.720	.787	.862	.940	.980	.985	.989	.993	.995	.995	.995	.995	.995	.995
150	.032	.059	.130	.171	.225	.368	.613	.703	.789	.902	.968	.978	.984	.991	.994	.995	.995	.995	.995	.995
200	.018	.034	.076	.101	.136	.235	.439	.530	.624	.747	.928	.953	.969	.985	.992	.993	.994	.995	.996	.996
250	.012	.022	.050	.066	.090	.160	.319	.398	.462	.640	.871	.913	.944	.975	.989	.991	.993	.994	.995	.996
300	.008	.015	.035	.047	.064	.115	.239	.304	.366	.570	.798	.859	.907	.959	.984	.988	.991	.994	.995	.995
350	.006	.011	.026	.035	.044	.084	.184	.218	.267	.476	.720	.736	.860	.938	.978	.984	.988	.992	.995	.995
400	.005	.009	.020	.027	.037	.067	.145	.189	.248	.399	.643	.723	.806	.910	.969	.979	.985	.991	.994	.995
450	.004	.007	.016	.021	.029	.054	.117	.154	.204	.336	.572	.662	.749	.877	.957	.971	.980	.989	.993	.994
500	.003	.006	.013	.017	.024	.044	.096	.127	.170	.286	.507	.578	.691	.840	.943	.962	.975	.987	.993	.994
600	.002	.004	.009	.012	.017	.031	.068	.091	.122	.212	.400	.496	.582	.757	.906	.938	.959	.981	.991	.992
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.991	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.874	.967	.982	.987	.990	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.751	.883	.962	.975	.983	.990	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.512	.702	.886	.925	.952	.979	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.348	.529	.771	.839	.894	.955	.984	.988	.991	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995
50	.246	.398	.647	.734	.813	.917	.973	.981	.987	.992	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995
75	.121	.211	.404	.431	.592	.771	.910	.947	.966	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
100	.071	.127	.261	.312	.419	.608	.828	.881	.924	.968	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
125	.046	.094	.180	.213	.302	.472	.720	.787	.862	.940	.980	.985	.989	.993	.995	.995	.995	.995	.995	.995
150	.032	.059	.130	.171	.225	.368	.613	.703	.789	.902	.968	.978	.984	.991	.994	.995	.995	.995	.995	.995
200	.018	.034	.076	.101	.136	.235	.439	.530	.624	.747	.928	.953	.969	.985	.992	.993	.994	.995	.996	.996
250	.012	.022	.050	.066	.090	.160	.319	.398	.462	.640	.871	.913	.944	.975	.989	.991	.993	.994	.995	.996
300	.008	.015	.035	.047	.064	.115	.239	.304	.366	.570	.798	.859	.907	.959	.984	.988	.991	.994	.995	.995
350	.006	.011	.026	.035	.044	.084	.184	.218	.267	.476	.720	.736	.860	.938	.978	.984	.988	.992	.995	.995
400	.005	.009	.020	.027	.037	.067	.145	.189	.248	.399	.643	.723	.806	.910	.969	.979	.985	.991	.994	.995
450	.004	.007	.016	.021	.029	.054	.117	.154	.204	.336	.572	.662	.749	.877	.957	.971	.980	.989	.993	.994
500	.003	.006	.013	.017	.024	.044	.096	.127	.170	.286	.507	.578	.691	.840	.943	.962	.975	.987	.993	.994
600	.002	.004	.009	.012	.017	.031	.068	.091	.122	.212	.400	.496	.582	.757	.906	.938	.959	.981	.991	.992
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.991	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.874	.967	.982	.987	.990	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.751	.883	.962	.975	.983	.990	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.512	.702	.886	.925	.952	.979	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.348	.529	.771	.839	.894	.955	.984	.988	.991	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995
50	.246	.398	.647	.734	.813	.917	.973	.981	.987	.992	.994	.995	.995	.995	.995	.995	.995	.995	.995	.995
75	.121	.211	.404	.431	.592	.771	.910	.947	.966	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
100	.071	.127	.261	.312	.419	.608	.828	.881	.924	.968	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
125	.046	.094	.180	.213	.302	.472	.720	.787	.862	.940	.980	.985	.989	.993	.995	.995	.995	.995	.995	.995
150	.032	.059	.130	.171	.225	.368	.613	.703	.789	.902	.968	.978	.984	.991	.994	.995	.995	.995	.995	.995
200	.018	.034	.076	.101	.136	.235	.439	.530	.624	.747	.928	.953	.969	.985	.992	.993	.994	.995	.996	.996
250	.012	.022	.050	.066	.090	.160	.319	.398	.462	.640	.871	.913	.944	.975	.989	.991	.993	.994	.995	.996
300	.008	.015	.035	.047	.064	.115	.239	.304	.366	.570										

Air-burst

[illegible]

14Q 7

16Q7

Ground-burst

Air-burst

		Ground-burst		Air-burst											
KT	Adj	0.01	0.02	0.05	0.10	0.20	0.500	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
WN	28.1	27.2	25.9	25.5	25.0	24.1	22.8	22.4	21.9	21.0	20.0	19.0	18.0	17.0	16.0
psi	823	583	371	316	263	187	120	102	86	62	41	35	30	23	16
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	25	34	52	61	71	98	148	172	202	275	414	480	562	759	1125
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.985	.991	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.913	.963	.986	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996
15	.762	.889	.984	.976	.983	.991	.994	.995	.996	.996	.996	.996	.996	.996	.996
20	.597	.776	.922	.949	.967	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996
30	.359	.542	.781	.897	.959	.985	.988	.991	.994	.995	.995	.996	.996	.996	.996
40	.228	.374	.621	.710	.794	.906	.970	.974	.985	.991	.994	.995	.995	.996	.996
50	.155	.266	.484	.578	.675	.833	.945	.963	.976	.988	.993	.994	.995	.996	.996
75	.073	.132	.270	.343	.431	.621	.837	.889	.928	.968	.988	.990	.992	.994	.996
100	.342	.077	.166	.216	.282	.446	.695	.776	.846	.933	.977	.984	.988	.992	.995
125	.027	.051	.111	.147	.195	.325	.561	.654	.744	.877	.960	.973	.981	.990	.994
150	.019	.035	.079	.105	.141	.243	.451	.542	.640	.807	.933	.956	.971	.985	.997
200	.011	.020	.046	.061	.083	.148	.298	.374	.465	.654	.855	.902	.936	.972	.988
250	.007	.013	.029	.040	.054	.099	.207	.266	.341	.518	.757	.826	.883	.949	.981
300	.005	.009	.021	.028	.038	.070	.150	.196	.257	.410	.656	.740	.815	.915	.971
350	.004	.007	.015	.021	.028	.052	.114	.150	.198	.328	.562	.652	.741	.872	.956
400	.003	.005	.012	.016	.022	.040	.085	.118	.157	.266	.480	.571	.666	.822	.937
450	.002	.004	.009	.012	.017	.032	.071	.095	.127	.213	.412	.499	.595	.767	.912
500	.002	.003	.007	.010	.014	.026	.058	.078	.105	.183	.354	.436	.530	.711	.884
600	.001	.002	.005	.007	.010	.018	.041	.055	.074	.132	.267	.337	.421	.604	.816
KT	Adj	0.01	0.02	0.05	0.10	0.20	0.500	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
WN	28.1	27.2	25.9	25.5	25.0	24.1	22.8	22.4	21.9	21.0	20.0	19.0	18.0	17.0	16.0
psi	823	583	371	316	263	187	120	102	86	62	41	35	30	23	16
HR	21	24	39	44	50	64	89	101	114	147	204	230	252	335	463
WB	37	49	71	94	98	132	195	225	282	352	519	597	643	925	1346
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.963	.985	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.907	.953	.984	.993	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.876	.939	.983	.978	.985	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996
30	.582	.753	.905	.936	.958	.980	.991	.992	.993	.995	.996	.996	.996	.996	.996
40	.410	.507	.694	.862	.908	.959	.984	.988	.991	.993	.995	.995	.996	.996	.996
50	.275	.452	.648	.768	.835	.925	.974	.981	.986	.992	.994	.995	.996	.996	.996
75	.143	.247	.444	.531	.624	.768	.922	.947	.965	.981	.991	.993	.994	.995	.996
100	.088	.151	.293	.364	.444	.627	.831	.894	.923	.966	.986	.989	.991	.994	.996
125	.057	.100	.203	.258	.328	.433	.577	.698	.861	.937	.977	.984	.988	.992	.994
150	.040	.071	.147	.190	.246	.387	.621	.705	.784	.896	.944	.975	.982	.990	.994
200	.023	.041	.087	.113	.150	.249	.446	.532	.625	.788	.921	.946	.964	.982	.991
250	.015	.026	.057	.075	.100	.170	.325	.400	.489	.668	.856	.901	.934	.970	.987
300	.010	.018	.040	.053	.071	.111	.243	.306	.357	.557	.779	.841	.892	.951	.981
350	.009	.014	.030	.040	.053	.092	.184	.238	.304	.464	.697	.772	.837	.925	.973
400	.006	.010	.023	.030	.041	.072	.144	.191	.246	.347	.619	.702	.780	.892	.961
450	.005	.009	.019	.024	.032	.057	.120	.155	.202	.326	.546	.637	.714	.853	.947
500	.004	.007	.015	.019	.026	.047	.099	.128	.163	.277	.482	.568	.659	.810	.929
600	.003	.005	.010	.014	.018	.033	.070	.092	.121	.205	.377	.457	.544	.719	.883

16Q7

17Q9

Ground-burst

Air-burst

17Q9

KT	001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.1	29.2	27.9	27.5	27.0	26.0	24.8	24.3	23.9	22.9	21.7	21.2	20.8	19.9	18.7	18.3	17.8	17.0	16.0	15.4
psi	1720	1217	771	652	548	386	245	207	174	124	78	67	56	41	26	23	19	14	10	9
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	21	29	44	51	60	82	124	145	170	233	352	410	482	659	992	1153	1350	1432	2727	3150
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.978	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.960	.940	.980	.986	.989	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.952	.925	.942	.962	.975	.987	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.937	.879	.873	.916	.946	.977	.990	.992	.993	.993	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.272	.434	.685	.768	.861	.931	.977	.984	.988	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
40	.168	.285	.511	.605	.701	.851	.952	.968	.979	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996
50	.112	.197	.381	.469	.568	.751	.911	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
75	.052	.095	.201	.259	.334	.512	.757	.886	.952	.983	.988	.990	.993	.995	.995	.995	.996	.996	.996	.996
100	.030	.055	.120	.159	.211	.348	.592	.683	.771	.894	.966	.977	.984	.991	.994	.995	.995	.996	.996	.996
125	.019	.036	.090	.106	.142	.246	.456	.548	.647	.813	.937	.959	.973	.987	.993	.994	.994	.995	.996	.996
150	.013	.025	.056	.075	.102	.180	.354	.438	.536	.723	.896	.932	.956	.980	.991	.992	.994	.995	.996	.996
200	.008	.014	.032	.043	.059	.107	.225	.288	.368	.552	.788	.932	.953	.985	.985	.991	.994	.995	.995	.995
250	.003	.009	.021	.028	.038	.071	.153	.200	.261	.419	.668	.753	.828	.924	.975	.982	.987	.992	.995	.995
300	.003	.006	.014	.020	.027	.050	.110	.185	.193	.322	.558	.651	.742	.876	.960	.973	.981	.990	.994	.994
350	.002	.005	.011	.014	.020	.037	.082	.109	.147	.252	.464	.557	.655	.818	.938	.959	.973	.986	.993	.994
400	.002	.004	.008	.011	.015	.028	.064	.085	.115	.202	.388	.475	.573	.734	.910	.941	.962	.982	.991	.993
450	.001	.003	.006	.009	.012	.023	.051	.068	.093	.164	.326	.407	.501	.690	.877	.918	.947	.976	.990	.992
500	.001	.002	.005	.007	.010	.018	.041	.056	.076	.136	.277	.350	.439	.628	.840	.921	.972	.989	.997	.999
600	.001	.002	.004	.005	.007	.013	.029	.039	.054	.097	.205	.264	.339	.516	.757	.926	.984	.990	.992	.996

KT	001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.1	29.2	27.9	27.5	27.0	26.0	24.8	24.3	23.9	22.9	21.7	21.2	20.8	19.9	18.7	18.3	17.8	17.0	16.0	15.4
psi	1720	1217	771	652	548	386	245	207	174	124	78	67	56	41	26	23	19	14	10	9
HOB	20	26	37	42	47	61	85	96	110	141	197	222	233	324	431	509	578	740	1028	1154
WR	32	43	63	73	85	115	170	197	229	308	456	527	614	895	1217	1403	1611	2141	3144	3662
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.990	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.955	.970	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.945	.940	.974	.984	.988	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.713	.965	.955	.969	.977	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.497	.677	.961	.907	.939	.972	.988	.991	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.315	.502	.735	.806	.866	.940	.979	.985	.988	.993	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996
50	.235	.373	.605	.691	.773	.890	.963	.974	.982	.990	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996
75	.115	.196	.366	.446	.530	.716	.886	.923	.950	.977	.990	.992	.993	.993	.995	.996	.996	.996	.996	.996
100	.067	.117	.233	.295	.371	.544	.771	.836	.889	.951	.987	.987	.990	.993	.995	.995	.995	.996	.996	.996
125	.044	.077	.150	.204	.263	.411	.648	.730	.806	.909	.969	.978	.985	.991	.994	.995	.995	.996	.996	.996
150	.031	.055	.114	.149	.194	.316	.536	.625	.714	.853	.943	.966	.977	.989	.993	.994	.994	.995	.996	.996
200	.017	.031	.067	.087	.116	.197	.367	.450	.542	.710	.888	.924	.950	.977	.990	.992	.993	.993	.995	.996
250	.011	.020	.043	.057	.077	.133	.262	.329	.409	.544	.804	.862	.909	.944	.984	.989	.991	.993	.995	.995
300	.009	.014	.030	.041	.054	.095	.193	.246	.314	.476	.712	.786	.851	.913	.976	.983	.987	.992	.994	.995
350	.006	.010	.022	.030	.040	.071	.147	.190	.246	.397	.627	.704	.786	.857	.965	.975	.983	.990	.994	.994
400	.004	.009	.017	.023	.031	.055	.115	.150	.196	.318	.540	.628	.717	.844	.949	.965	.976	.987	.993	.994
450	.003	.006	.014	.018	.025	.044	.093	.121	.160	.265	.469	.556	.640	.804	.929	.952	.968	.984	.992	.993
500	.003	.005	.011	.015	.020	.036	.076	.100	.132	.222	.407	.491	.585	.755	.906	.936	.959	.983	.990	.992
600	.002	.004	.009	.010	.014	.025	.054	.071	.094	.162	.317	.396	.471	.634	.848	.905	.930	.969	.990	.990

17Q9

18Q7

Ground-burst

PT	201	202	205	207	210	220	250	706	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Ad. V.	30.1	29.7	27.9	27.5	27.0	26.1	24.8	23.9	23.0	21.9	21.5	20.3	19.3	18.0	17.3	17.1
psi	1706	1209	768	650	546	488	429	379	329	280	230	180	130	80	30	0
HO	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR	21	23	44	51	60	82	124	144	169	230	346	402	470	636	941	1065
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
3	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.979	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994	.994
10	.960	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980
15	.964	.985	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982
20	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980	.980
30	.973	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
40	.958	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
50	.912	.987	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982	.982
75	.952	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995	.995
100	.930	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955	.955
125	.913	.936	.940	.940	.940	.940	.940	.940	.940	.940	.940	.940	.940	.940	.940	.940
150	.913	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925	.925
200	.908	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914	.914
250	.905	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908	.908
300	.903	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906	.906
350	.902	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905	.905
400	.902	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904	.904
450	.902	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903	.903
500	.901	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902
500	.901	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902	.902

Air-burst

18Q7

20Q8

Ground-burst

Air-burst

2073

KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj	32.7	31.7	30.5	30.0	29.5	28.6	27.4	26.9	26.4	25.5	24.3	23.4	22.4	21.6	21.5	21.1	20.7	20.0	19.1	18.9
psi	4313	3053	1936	1639	1373	1079	821	526	443	317	205	175	148	109	73	64	55	43	31	28
MB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	17	23	35	41	48	65	99	115	135	165	279	325	381	518	774	995	1044	1402	2054	2358
CLP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	961	981	991	993	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	762	889	965	976	984	991	994	995	996	996	996	996	996	996	996	996	996	996	996	996
15	526	715	892	929	955	979	991	992	993	995	996	996	996	996	996	996	996	996	996	996
20	360	543	782	848	900	958	985	989	991	994	995	995	996	996	996	996	996	996	996	996
30	187	314	550	643	736	873	959	973	981	990	994	994	995	995	996	996	996	996	996	996
40	112	196	380	468	566	750	910	941	962	982	992	992	993	994	995	996	996	996	996	996
50	72	132	271	343	432	623	838	891	930	970	988	991	992	993	994	995	996	996	996	996
75	334	662	1135	1777	2394	381	629	717	799	909	979	989	996	991	994	995	996	996	996	996
100	014	036	077	116	142	245	454	546	644	810	915	957	972	986	993	994	995	996	996	996
125	012	023	052	069	094	167	331	413	508	697	981	521	599	577	990	992	993	995	995	996
150	009	016	036	049	067	120	243	317	401	548	813	671	716	764	986	989	991	994	994	995
200	005	009	021	028	036	070	152	198	259	415	643	747	823	920	973	981	986	992	994	995
250	003	006	013	019	025	046	101	134	178	299	527	619	712	856	951	967	978	988	993	994
300	002	004	009	013	017	032	072	095	129	223	418	507	605	778	920	946	965	983	991	993
350	002	003	007	009	013	024	053	071	075	171	336	416	511	696	878	918	946	975	989	991
400	001	002	005	007	010	018	041	055	075	134	273	344	431	617	823	882	922	965	986	988
450	001	002	004	006	008	014	033	044	060	108	225	287	366	545	776	841	893	952	982	986
500	001	001	003	005	006	012	027	036	049	063	184	242	312	481	721	796	859	936	977	983
550	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
600	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
650	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
700	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
750	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
800	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
850	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
900	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
950	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1000	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1050	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1100	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1150	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1200	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1250	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1300	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1350	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1400	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1450	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1500	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1550	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1600	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1650	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1700	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1750	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1800	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1850	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1900	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
1950	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983
2000	001	001	002	003	004	008	027	035	046	063	186	242	312	481	721	796	859	936	977	983

20Q8

20Q9

Ground-burst

Air-burst

20Q9

KT	.001	-.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Vm	33.1	32.2	30.9	30.5	30.0	27.8	27.3	26.9	25.9	24.7	24.2	24.2	23.8	22.9	21.7	21.3	20.8	20.0	19.0	18.6
PaL	5137	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	16	22	33	35	46	63	95	111	130	178	270	314	369	504	760	882	1034	1402	2087	2411
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.956	.980	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.740	.876	.960	.973	.982	.990	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.500	.691	.890	.920	.949	.978	.990	.992	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.338	.517	.761	.831	.888	.933	.963	.988	.991	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996
30	.174	.294	.524	.618	.713	.859	.934	.970	.980	.989	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996
40	.113	.183	.358	.443	.541	.728	.899	.934	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996
50	.068	.123	.253	.322	.408	.597	.822	.879	.922	.967	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
75	.011	.057	.125	.165	.218	.359	.604	.695	.781	.899	.968	.978	.985	.991	.994	.995	.996	.996	.996	.996
100	.018	.033	.073	.098	.132	.228	.430	.521	.621	.793	.929	.953	.970	.985	.992	.994	.995	.996	.996	.996
125	.011	.021	.048	.064	.087	.155	.312	.391	.484	.675	.870	.914	.945	.976	.990	.992	.993	.995	.996	.996
150	.008	.015	.033	.045	.062	.112	.233	.298	.379	.565	.798	.860	.908	.961	.989	.991	.994	.995	.995	.995
200	.004	.008	.019	.028	.035	.065	.141	.185	.243	.394	.642	.730	.809	.914	.972	.980	.986	.992	.994	.994
250	.003	.005	.012	.017	.023	.042	.094	.126	.166	.282	.506	.599	.685	.846	.948	.964	.977	.988	.993	.994
300	.002	.004	.009	.012	.016	.030	.066	.089	.120	.209	.399	.488	.586	.765	.915	.944	.964	.983	.991	.993
350	.001	.003	.006	.008	.012	.022	.049	.066	.090	.160	.319	.398	.492	.681	.872	.914	.945	.975	.989	.991
400	.001	.002	.005	.007	.009	.017	.038	.051	.070	.126	.258	.328	.413	.601	.922	.877	.920	.965	.986	.999
450	.001	.002	.004	.005	.007	.013	.030	.041	.056	.101	.212	.273	.350	.579	.767	.835	.890	.932	.983	.987
500	.001	.001	.003	.004	.006	.011	.025	.033	.046	.083	.177	.230	.299	.465	.711	.78	.855	.936	.978	.984
600	.001	.002	.003	.004	.006	.017	.023	.032	.059	.128	.168	.221	.362	.604	.683	.777	.895	.985	.985	.976

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Vm	33.1	32.2	30.9	30.5	30.0	27.8	27.3	26.9	25.9	24.7	24.2	24.2	23.8	22.9	21.7	21.3	20.8	20.0	19.0	18.6
PaL	5137	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134	5134
HOB	10	24	34	44	57	73	90	102	122	160	209	237	304	424	478	444	447	468	1088	9753
WR	26	35	52	60	69	93	134	159	186	250	369	428	466	667	983	1133	1317	1760	7571	9753
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.986	.992	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.921	.965	.986	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.781	.894	.964	.975	.982	.990	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.670	.784	.890	.904	.918	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924	.924
30	.553	.677	.800	.842	.892	.952	.942	.942	.942	.942	.942	.942	.942	.942	.942	.942	.942	.942	.942	.942
40	.443	.583	.701	.791	.884	.964	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975
50	.365	.479	.567	.659	.749	.834	.933	.955	.970	.990	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
75	.079	.136	.267	.334	.415	.593	.808	.865	.910	.967	.985	.988	.991	.994	.995	.996	.996	.996	.996	.996
100	.045	.080	.164	.210	.270	.420	.656	.734	.812	.912	.970	.971	.985	.991	.994	.995	.996	.996	.996	.996
125	.029	.052	.109	.142	.196	.303	.520	.608	.699	.802	.905	.945	.975	.987	.991	.994	.996	.996	.996	.996
150	.021	.037	.078	.103	.135	.226	.412	.497	.590	.760	.909	.940	.960	.981	.985	.988	.991	.993	.995	.996
200	.012	.021	.045	.059	.079	.137	.268	.335	.417	.575	.810	.866	.911	.960	.985	.988	.991	.993	.995	.996
250	.007	.013	.021	.033	.052	.091	.194	.245	.301	.441	.696	.772	.840	.937	.974	.982	.987	.992	.996	.996
300	.005	.009	.021	.027	.036	.064	.133	.172	.224	.357	.587	.673	.757	.930	.953	.972	.980	.984	.991	.994
350	.004	.007	.015	.020	.027	.046	.100	.131	.172	.282	.492	.580	.672	.803	.936	.957	.971	.985	.992	.993
400	.003	.005	.011	.015	.021	.037	.078	.103	.135	.227	.414	.494	.592	.761	.908	.934	.954	.980	.990	.992
450	.002	.004	.009	.012	.016	.029	.062	.082	.106	.186	.350	.429	.519	.674	.874	.914	.943	.974	.988	.991
500	.002	.003	.007	.010	.013	.024	.051	.067	.090	.154	.279	.370	.456	.615	.836	.886	.924	.966	.986	.989
600	.001	.002	.005	.007	.009	.017	.036	.047	.064	.111	.222	.281	.354	.524	.752	.819	.876	.944	.979	.985

20Q9

Appendix A

JOSS PROGRAM LISTING

[illegible]

FUNCTIONS

MATHEMATICAL:

sqrt(x) square root, $x \geq 0$
sin(x) x in radians, $x \in (-100, 100)$
cos(x) x in radians, $x \in (-100, 100)$
log(x) natural log, $x > 0$
exp(x) e^x , $\exp(1) = e$
arg(x,y) central angle, in radians, from positive x axis to the point (x,y) .
 $\arg(0,0)=0$, $\arg(-1,0)=\pi$.

NUMBER DISSECTION:

sgn(x) signum (or sign) $= -1$ if $x < 0$
 $= 0$ if $x = 0$
 $= +1$ if $x > 0$
ip(x) integer part $ip(100.5) = 100$
fp(x) fractional part $fp(100.5) = .5$
dp(x) digit part $dp(100.5) = 1.005$
xp(x) exponent part $xp(100.5) = 2$
x absolute value for numeric values
 $= 0$ if $x=false$
 $= 1$ if $x=true$
tv(x) translation value $= 1$ if $x=true$
 $= 0$ if $x=false$
 $= false$ if $x=0$
 $= true$ if $x \neq 0$

ITERATIVE:

sum[i=a(b)c: f(i)] $\text{sum}[x, y, z+10]$
prod[i=a(b)c: f(i)] $\text{prod}[x, y, z+10]$
min[i=a(b)c: f(i)] $\text{min}[x, y, z+10]$
max[i=a(b)c: f(i)] $\text{max}[x, y, z+10]$
conj[i=a(b)c: P(i)] $\text{conj}[x:y=z, y-3, P]$
disj[i=a(b)c: P(i)] $\text{disj}[x:y=z, y-3, P]$
first[i=a(b)c: P(i)] gives first value of i for which $P(i)$ is true

RULES OF FORM

One command per line, one line per command.

Each input line must be ended by pressing the Return key.

Before you type anything, make sure that JESS is ready to receive input. It will indicate this by typing an underscore and, if available, ringing the bell.

Lines can be corrected by backspacing and retyping before pressing Return. Lines that begin or end with an asterisk, or end with an interrupt, are ignored.

Words and numerals may neither abut nor contain embedded spaces; spaces may not appear between an identifier (not any array, a formula, or a function) and its associated left grouper, otherwise, spaces may be used freely.

Except for the step number at the beginning of a stored command, anywhere a number may be used, an equivalent expression may also be used.

The not sign as used in "not equal" (\neq) may appear as a backslash or a tilde on some terminals. The underscore may appear as a left-pointing arrow.

STATEMENT FORMAT

Step Number	Verb	Arguments	Modifiers
1.23	Type	$x,y,z+3$	in form 3 if $x+y>10$.
1.4	Do	part 6	for $x = 1(1)100, 500$.

VIM AUXILIARY

DIRECT

COMMAND: Step number not present; command is executed immediately.

STORED

COMMAND: Step number present; command is stored in order of step number.

STEP:

A stored command; step number is limited to 9-digit number $\neq 1$.

PART:

A group of steps whose step numbers have the same integer part.

FORM:

A pictorial specification of literal information and fields to be filled with values, used for formatted output. Fields are indicated by strings of underscores (with an optional decimal point) or strings of periods (for a tabular form of scientific notation).

NUMBERS:

Limited to 9 significant digits:
 $10^{-9} = \text{value} = 9.99999999 \times 10^{93}$
or value $= 0$

SYMBOLS:

Single-letter identifiers, upper or lower case. May identify decimal values, logical values (true, false), formulas, and arrays of values.

FORMULAS:

May have up to 10 formal parameters (distinct letters) or none (see Let, under Verbs).

ARRAYS:

May have up to 10 integer-valued indices in the range $[-250, 250]$.

ARITHMETIC:

Addition (+), subtraction (-), multiplication (*), division (/), exponentiation (**), and square root (sqrt) give true results rounded to 9 significant digits. Zero is substituted on underflow.

RELATIONS:

$=$, $<$, $>$, \neq , \leq , \geq (extended relations allowed; e.g., $a:b=c$).

LOGIC:

and, or, not

GROUPERS:

() [] used interchangeably, in pairs.

IMPLIED

GROUPINGS: $3+1/2+1/4*5 = \{3+(1/2)+[(1/4)*5]$
 $-2**3*4-5 = [-(2^3)*4]-5$
 $2**3**4 = (2^3)^4$

a or b and not c or $d = a$ or $[b$ and (not $c)]$ or d